TOSHIBA

FILE NO. 023-200023

SERVICE MANUAL

COLOR TELEVISION

N0NSP Chassis

43A10, 43AX60

(TAC0054) *(TAC0057)*

– SUMMARY –

43A10, 43AX60 are the same as 50A60 except for the parts and bus data of micro-processor, Convergence ajustment and Mechanical disassembly tabled on back of this sheet.
Use this service manual together with the service manual of 50A60, 50A50, 55A60, 61A60 (File No. 020-200012).

PUBLISHED IN JAPAN. Jul., 2000 (So)

SETTING & ADJUSTING DATA DIFFERENCES

【SERVICE MODE】

ADJUSTING ITEMS AND DATA IN THE SERVICE MODE:

Item	Name of adjustment	Preset	Data
HIT	V-HEIGHT	64H	5EH
VSC	V-S CORRECTION	10H	0EH
WID	PICTURE WIDTH	28H	29H
LIN	V-LINEARITY	12H	11H
PARA	E-W PARABOLA(DPC)	29H	26H
TRAP	TRAPEZIUM	10H	20H

Table-2

【DESIGN MODE】

ADJUSTING ITEMS AND DATA IN THE DESIGN MODE:

Item	Name of adjustment	Preset Data	Data
OPT1	OPTION 1	80H	C1H
OPT2	OPTION 2	00H	03H

Table-3

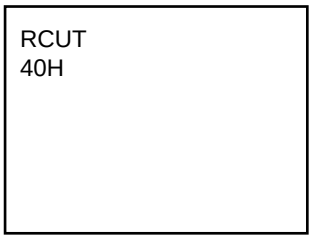
CONVERGENCE ADJUSTMENT

Adjust convergence from center to circumference in order.

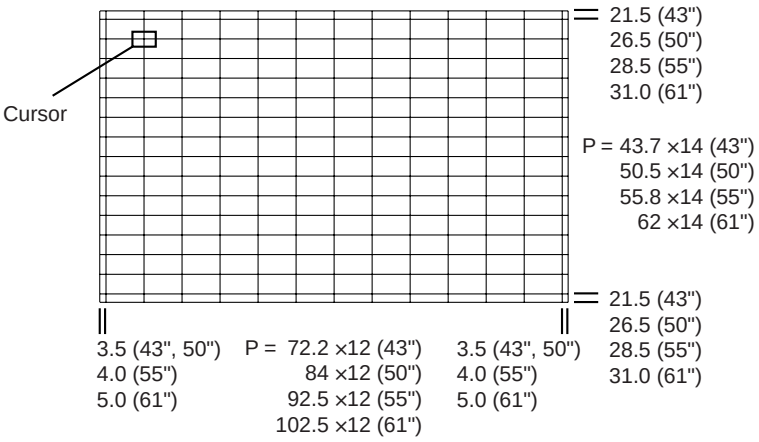
KEY FUNCTION IN THE CONVERGENCE ADJUSTMENT:

Up :	2 button
Selet Green color:	3 button
Left :	4 button
Blinking of cursor ON/OFF:	5 button
Right:	6 button
Adjust mode ON/OFF:	7 button
Down:	8 button
Erase Green line:	0 button
Erase Red line:	100 button
Erase Blue line:	CHRTN (ENT) button

1. Select the adjustment mode following the steps on page 9 of original service manual.



2. Press “7” button to display the built-in cross-hatch pattern.



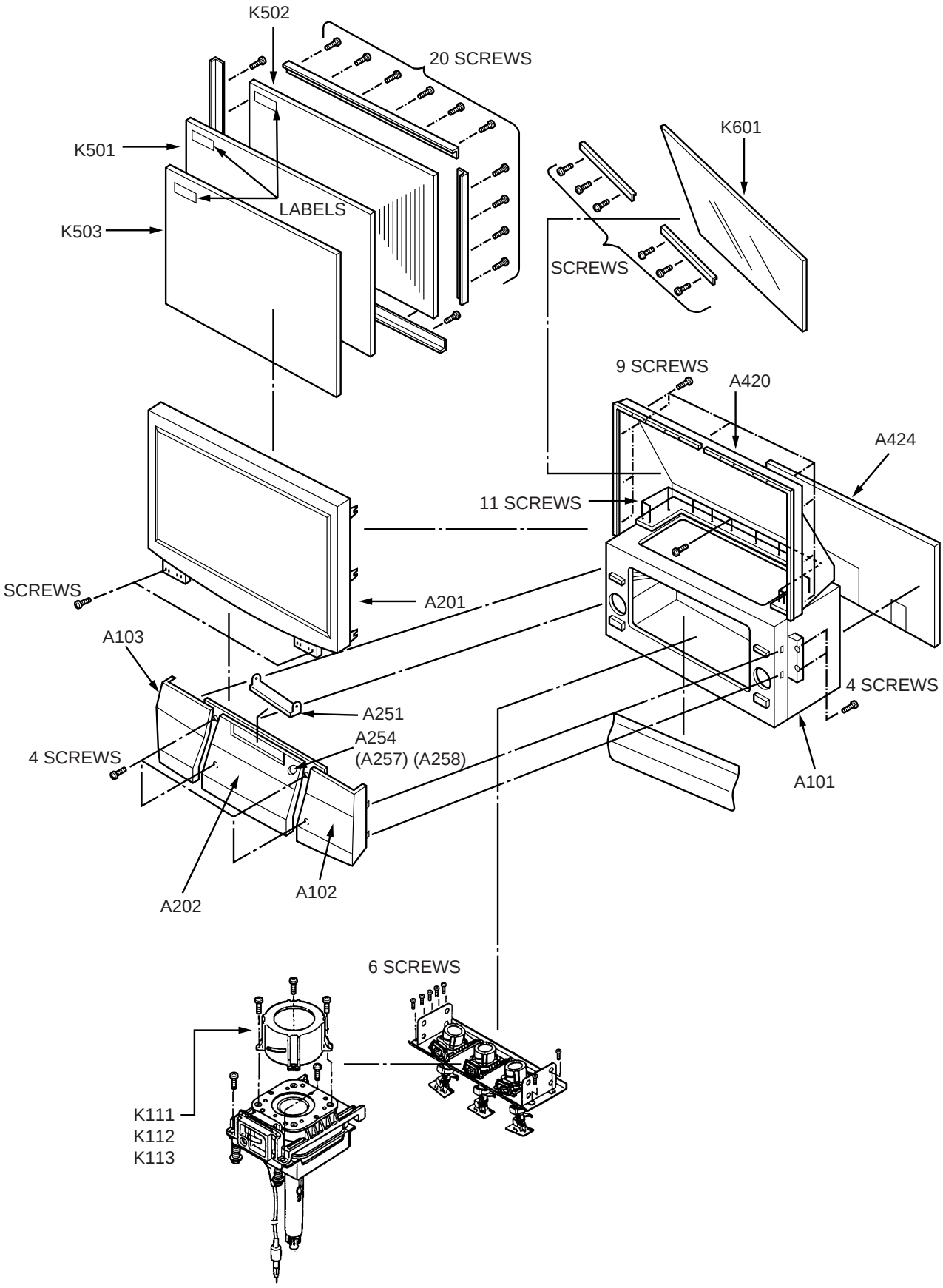
Note:
Adjusting procedure in replacing convergence board.

1. User convergence center check. Make sure the best convergence setting is about the center of adjustable range.
2. CENTERING ADJUSTMENT
3. PICTURE POSITION ADJUSTMENT
4. HIT, WID ADJUSTMENT
5. CONVERGENCE ADJUSTMENT

The pattern includes three colors (R, G, B).
The cursor should be blinking in Red.
This means that the Red color is adjustable.
Adjustment around cursor can be done.

3. Press “3” button to select Green color to be adjusted.
4. Press “5” button to stop the blinking of cursor.
5. Press “2 (up)”, “8 (down)”, “4 (left)” or “6 (right)” to obtain the correct cross-hatch pattern as above.
   If necessary, the specified color line can be erased from the screen.
   100 button ..... to erase Red line
   0 button ..... to erase Green line
   RTN (ENT) button ..... to erase Blue line
6. Press “5” button to make the cursor blinking.
7. Press “2”, “8”, “4”, “6” buttons to move the cursor to other point to be adjusted.
8. Repeat steps 4 to 7.
9. Repeat steps 3 to 8 to adjust Red and Blue colors.
   Converge the selected color line into the Green line.
10. Press “7” button to enter the adjusted states.
    At this time, picture changes for about 1 second.
11. Press “7” button again to return to the normal picture.

MECHANICAL DISASSEMBLY



REPLACEMENT PARTS LIST DIFFERENCES

Location No.	Part No.	Description
A101	23465852	Wood Cabinet
A102	23519892	Speaker Grille, R (43A10)
A102	23527147	Speaker Grille, R (43AX60)
A103	23519893	Speaker Grille, L (43A10)
A103	23527148	Speaker Grille, L (43AX60)
A201	23510392	Bezel (43A10)
A201	23540142	Bezel (43AX60)
A202	23450265	Control Panel (43A10)
A202	23450274	Control Panel (43AX60)
A251	23427384	Door (43A10)
A251	23427844	Door (43AX60)
A254	23445157	Knob, Power (43A10)
A254	23445424	Knob, Power (43AX60)
A255	23564376	Label
A257	23836492	Spring
A258	23451976	Push Catch
A420	23427355	Back Cover
A424	23540128	Back Board
A701	23525619	Case (43A10)
A701	23525654	Case (43AX60)
A703	23935778	Packing, Top
A708	23935779	Packing, Bottom
C477	24082943	PF, 3600pF, ±3%, 1500V
C621	24085960	EL, 4.7μF, ±20%, 50V, Non-Polar (43A10)
C636	24085960	EL, 4.7μF, ±20%, 50V, Non-Polar (43A10)
C646	24815223	Chip, 0.022μF, ±10%
C647	24815473	Chip, 0.047μF, ±10%
C648	24815333	Chip, 0.033μF, ±10%
C664	24669479	EL, 4.7μF, ±20%, 50V
CV10	24794100	EL, 10μF, ±20%, 16V
CV11	24232103	CD, 0.01μF, +80%, –20%, 50V
CV12	24232103	CD, 0.01μF, +80%, –20%, 50V
CZ01	24797478	EL, 0.47μF, ±20%, 50V (43A10)
CZ02	24794101	EL, 100μF, ±20%, 16V (43A10)
CZ03	24092398	CD, 0.01μF, +80%, –20%, 25V (43A10)
CZ04	24476103	CD, 0.01μF, ±30%, 16V (43A10)
CZ05	24476103	CD, 0.01μF, ±30%, 16V (43A10)
CZ06	24476103	CD, 0.01μF, ±30%, 16V (43A10)
CZ07	24794101	EL, 100μF, ±20%, 16V (43A10)
CZ09	24567103	PF, 0.01μF (43A10)
CZ11	24567103	PF, 0.01μF (43A10)
CZ12	24474181	Chip, 180pF, ±10% (43A10)
CZ13	24476103	CD, 0.01μF, ±30%, 16V (43A10)
CZ14	24476103	CD, 0.01μF, ±30%, 16V (43A10)
CZ15	24473560	CD, 56pF (43A10)
CZ16	24473470	CD, 47pF (43A10)
CZ18	24092398	CD, 0.01μF, +80%, –20%, 25V (43A10)
CZ19	24794330	EL, 33μF, ±20%, 16V (43A10)
CZ23	24092398	CD, 0.01μF, +80%, –20%, 25V (43A10)
CZ27	24436080	CD, 8pF, ±0.25pF (43A10)
CZ28	24436151	CD, 150pF, ±0.25pF (43A10)
CZ29	24436151	CD, 150pF, ±0.25pF (43A10)
CZ30	24436101	CD, 10pF, ±0.25pF (43A10)
DB11	23358501	Diode (LED), SCL003URC5F
DB14	23118859	Diode, 1SS133
✻E031Z		CRT-D/R Board, PB9454C1 (43A10)
✻E031Z		CRT-D/R Board, PB9454F1 (43AX60)
✻E032Z		CRT-D/G Board, PB9454C2 (43A10)
✻E032Z		CRT-D/G Board, PB9454F2 (43AX60)
✻E033Z		CRT-D/B Board, PB9454C3 (43A10)
✻E033Z		CRT-D/B Board, PB9454F3 (43AX60)
✻E034Z		FRONT-CON Board, PB9454C8 (43A10)
✻E034Z		FRONT-CON Board, PB9454F8 (43AX60)
✻E035Z		FRONT-IN Board, PB9454C9 (43A10)
✻E035Z		FRONT-IN Board, PB9454F9 (43AX60)
✻E036Z		SVM Board, PB9454C6 (43A10)
✻E036Z		SVM Board, PB9454F6 (43AX60)
✻E037Z		2L-COMB Board, PB9454C7 (43A10)
✻E040Z		REM Board, PB9454C10 (43A10)
✻E040Z		REM Board, PB9454F10 (43AX60)
K111	23430512	Delta, 67-A/B Assembly
K112	23430512	Delta, 67-A/B Assembly
K113	23430512	Delta, 67-A/B Assembly
K501	23430786	Lenti Sheet, SCREEN43KK-L
K502	23837526	Fresnel Sheet, SCREEN43KH-F
K503	23430776	CONT-SCR43DK
K601	23430514	Mirror, MIRROR43H (43A10)
K601	23430601	Mirror, MIRROR43J (43AX60)
K912	23306359	Remote Hand Unit, CT-90037 (43A10)
K912	23306370	Remote Hand Unit, CT-90047 (43AX60)
K912A	23101998	Battery, R6KGT SP-2T (43A10)
L407	23248196	Coil, Choke, TLN3457AD
LV19	23238705	Coil, Peaking, TRF4560AJ
LZ01	23289330	Coil, Peaking, TRF4330AF (43A10)
LZ02	23103880	Coil (Ferrite Bead), TEM2011Y (43A10)
LZ03	23289339	Coil, Peaking, TRF43R3AF (43A10)
LZ04	23103880	Coil (Ferrite Bead), TEM2011Y (43A10)
LZ05	23289100	Coil, Peaking, TRF4100AF (43A10)

Location No.	Part No.	Description
LZ06	23289270	Coil, Peaking, TRF4270AF (43A10)
LZ08	23289159	Coil, Peaking, TRF41R5AF (43A10)
LZ09	23289339	Coil, Peaking, TRF43R3AF (43A10)
PB21	23368580	Plug, 6P
PV04	23365819	Jack, 1S3P
PV59	23367069	Plug, 9P
PZ01	23368006	Plug, 8P (43A10)
PZ02	23902064	Socket, 8P (43A10)
QA01	23000443	IC, MN102L35GFC (43AX60)
QB11	23114528	Transistor, 2SC1740S-Q
QZ01	23906207	IC, TC90A45P (43A10)
QZ02	23114528	Transistor, 2SC1740S-Q (43A10)
QZ03	23114528	Transistor, 2SC1740S-Q (43A10)
QZ04	23114528	Transistor, 2SC1740S-Q (43A10)
R416	24533102	FR, 1k ohm, 2W
R435	24322278	MF, 0.27 ohm, 1W (43AX60)
R601	24872682	Chip, 6800 ohm, 1/16W
R602	24872682	Chip, 6800 ohm, 1/16W
R603	24872562	Chip, 5600 ohm, 1/16W
R604	24872562	Chip, 5600 ohm, 1/16W
R611	24872332	Chip, 3300 ohm, 1/16W
R612	24872332	Chip, 3300 ohm, 1/16W
R900	24000945	FR, 1.8 ohm, 2W (43AX60)
RA81	24366683	CF, 68k ohm
RA82	24366223	CF, 22k ohm
RA83	24366103	CF, 10k ohm
RA86	24366822	CF, 8200 ohm
RA87	24366153	CF, 15k ohm
RA88	24366273	CF, 27k ohm
RB11	24366271	CF, 270 ohm
RB14	24366103	CF, 10k ohm
RV16	24366750	CF, 75 ohm
RV17	24366750	CF, 75 ohm
RV18	24366750	CF, 75 ohm
RV19	24366332	CF, 3300 ohm
RZ01	24366101	CF, 100 ohm (43A10)
RZ02	24366221	CF, 220 ohm (43A10)
RZ03	24366102	CF, 1k ohm (43A10)
RZ04	24366102	CF, 1k ohm (43A10)
RZ05	24366821	CF, 820 ohm (43A10)
RZ08	24366102	CF, 1k ohm (43A10)
RZ09	24366221	CF, 220 ohm (43A10)
RZ10	24366101	CF, 100 ohm (43A10)
RZ11	24366680	CF, 68 ohm (43A10)
SA11	23145226	Switch, Push, 1C1P
SA12	23145226	Switch, Push, 1C1P
SA13	23145226	Switch, Push, 1C1P
SA14	23145226	Switch, Push, 1C1P
SA15	23145226	Switch, Push, 1C1P
SA16	23145226	Switch, Push, 1C1P
SA17	23145226	Switch, Push, 1C1P
SA18	23145226	Switch, Push, 1C1P
* U701	23784783	DIGI-CONV Board, PB9453D
* U801		DEF/Power Board, PB9451C (43A10)
* U801		DEF/Power Board, PB9451D (43AX60)

Location No.	Part No.	Description
* U901		Signal/CON Board, PB9450E (43A10)
* U901		Signal/CON Board, PB9450H (43AX60)
* UV01		A/V Board, PB9452C (43A10)
* UV01		A/V Board, PB9452E (43AX60)
UY01	23148736	Module, MKMU31 (43AX60)
UZ01	23148718	Module, YMCJ31 (43AX60)
⚠ V901R	23003591	Coupling, R43 (43A10)
⚠ V901R	23005446	Coupling, R (43AX60)
⚠ V902G	23005423	Coupling, G43 (43A10)
⚠ V902G	23005447	Coupling, G (43AX60)
⚠ V903B	23003593	Coupling, B43 (43A10)
⚠ V903B	23005448	Coupling, B (43AX60)
W661	23351131	Speaker, SPK-1390
W662	23351131	Speaker, SPK-1390
Y101	23563954	Owner's Manual, English, 43A10
Y101	23563956	Owner's Manual, English, 43AX60
Y101F	23563955	Owner's Manual, French, 43A10
Y101F	23563957	Owner's Manual, French, 43AX60
Z410	23110842	Focus Pack, TPA6031 (43AX60)

MEMO

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TOSHIBA

FILE NO. 020-200012

SERVICE MANUAL

COLOR TELEVISION

N0NSP Chassis

50A60, 50A50

(TAC0050) *(TAC0051)*

55A60, 61A60

(TAC0052) *(TAC0053)*

PUBLISHED IN JAPAN, May., 2000 Ⓢ

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CHAPTER 1 GENERAL ADJUSTMENTS

SAFETY INSTRUCTIONS

WARNING: BEFORE SERVICING THIS CHASSIS, READ THE "X-RAY RADIATION PRECAUTION", "SAFETY PRECAUTION" AND "PRODUCT SAFETY NOTICE" INSTRUCTIONS BELOW.

X-RAY RADIATION PRECAUTION

1. Excessive high voltage can produce potentially hazardous X-RAY RADIATION. To avoid such hazards, the high voltage must not be above the specified limit. The nominal value of the high voltage of this receiver is (A) kV at zero beam current (minimum brightness) under a 120V AC power source. The high voltage must not, under any circumstances, exceed (B) kV.

   Refer to table-1 for high voltage (A), (B).
   (See SETTING & ADJUSTING DATA on page 17)

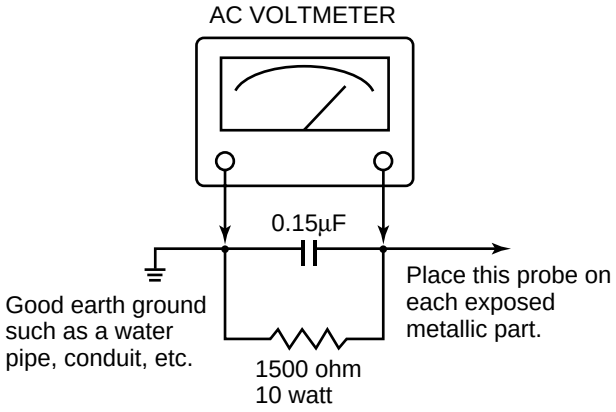
   Each time a receiver requires servicing, the high voltage should be checked following the HIGH VOLTAGE CHECK procedure in this manual. It is recommended that the reading of the high voltage be recorded as a part of the service record. It is important to use an accurate and reliable high voltage meter.
2. This receiver is equipped with a Fail Safe (FS) circuit which prevents the receiver from producing an excessively high voltage even if the B+ voltage increases abnormally. Each time the receiver is serviced, the FS circuit must be checked to determine that the circuit is properly functioning, following the FS CIRCUIT CHECK procedure in this manual.
3. The only source of X-RAY RADIATION in this TV receiver is the picture tube. For continued X-RAY RADIATION protection, the replacement tube must be exactly the same type tube as specified in the parts list.
4. Some part in this receiver have special safety-related characteristics for X-RAY RADIATION protection. For continued safety, parts replacement should be undertaken only after referring to the PRODUCT SAFETY NOTICE below.

SAFETY PRECAUTION

WARNING : Service should not be attempted by anyone unfamiliar with the necessary precautions on this receiver. The following are the necessary precautions to be observed before servicing this chassis.

1. An isolation Transformer should be connected in the power line between the receiver and the AC line before any service is performed on the receiver.
2. Always discharge the picture tube anode to the CRT conductive coating before handling the picture tube. The picture tube is highly evacuated and if broken, glass fragments will be violently expelled. Use shatter proof goggles and keep picture tube away from the unprotected body while handling.
3. When replacing a chassis in the cabinet, always be certain that all the protective devices are put back in place, such as; non-metallic control knobs, insulating covers, shields, isolation resistor-capacitor network etc.
4. Before returning the set to the customer, always perform an AC leakage current check on the exposed metallic parts of the cabinet, such as antennas, terminals, screwheads, metal overlays, control shafts etc. to be sure the set is safe to operate without danger of electrical shock. Plug the AC line cord directly into a 120V AC outlet (do not use a line isolation transformer during this check). Use an AC voltmeter having 5000 ohms per volt or more sensitivity in the following manner:

   Connect a 1500 ohm 10 watt resistor, paralleled by a 0.15 µF, AC type capacitor, between a known good earth ground (water pipe, conduit, etc.) and the exposed metallic parts, one at a time. Measure the AC voltage across the combination of 1500 ohm resistor and 0.15 µF capacitor. Reverse the AC plug at the AC outlet and repeat AC voltage measurements for each exposed metallic part. Voltage measured must not exceed 0.3 volts rms. This corresponds to 0.2 milliamp. AC. Any value exceeding this limit constitutes a potential shock hazard and must be corrected immediately.

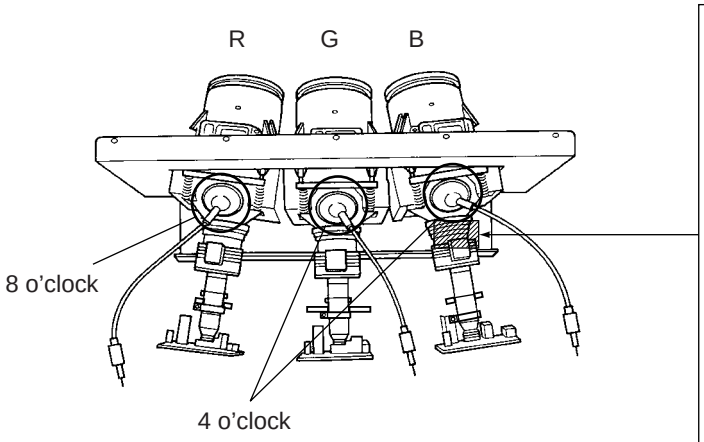

AC VOLTMETER
0.15µF
Good earth ground such as a water pipe, conduit, etc.
Place this probe on each exposed metallic part.
1500 ohm
10 watt

PRODUCT SAFETY NOTICE

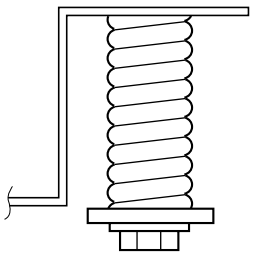
Many electrical and mechanical parts in this chassis have special safety-related characteristics. These characteristics are often passed unnoticed by a visual inspection and the protection afforded by them cannot necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in this manual and its supplements; electrical components having such features are identified by the international hazard symbols on the schematic diagram and the parts list.
Before replacing any of these components, read the parts list in this manual carefully. The use of substitute replacement parts which do not have the same safety characteristics as specified in the parts list may create shock, fire, X-ray radiation or other hazards.

CRT ASSEMBLY REPLACEMENT AND MOUNTING

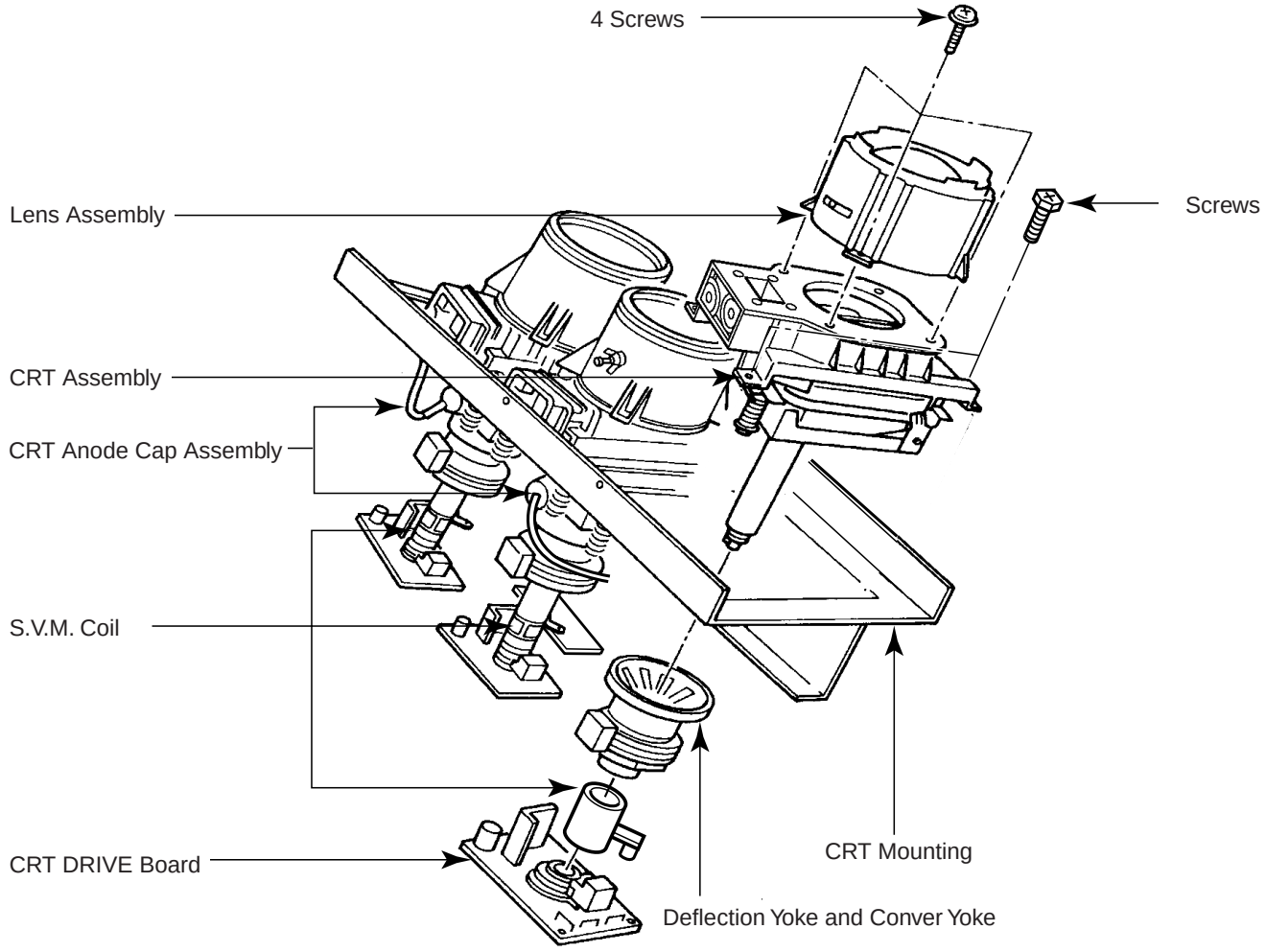
CAUTION : DO NOT LOOSEN THE HEX HEAD BOLTS WITH SPRINGS (12 PCS), BECAUSE THOSE ARE FOR SEALING OF CRT COOLANT.



Attention Serviceman



The Hex Head Bolts with Springs. (see sketch) used on CRT assembly, are "NOT" Adjustment Screws DO NOT LOOSEN-FLUID LEAKAGE WILL OCCUR.



Lens and Neck Components View

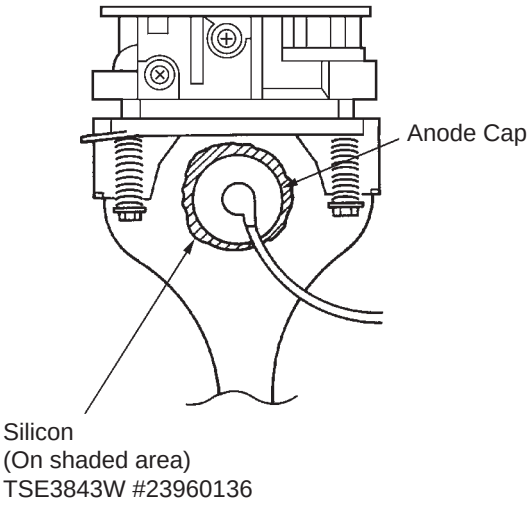
TO REMOVE CRT (Same procedure for R, G, B)

1. Remove CRT DRIVE Board, S. V. M. COIL and DEF. YOKE from CRT.
2. Remove Lens Assembly.
3. Detach CRT Anode Cap from CRT.
4. Remove CRT Assembly from CRT Mounting.

CRT REPLACEMENT (Same procedure for R, G, B)
Reverse the removal procedures except the followings.

1. Anode Cable should be replaced with new one. See “SERVICING PRECAUTIONS” shown below.
2. Install silicon (T461B) to the CRT, replace the Anode cable and put enough silicon again on around the Anode Cap as illustrated.

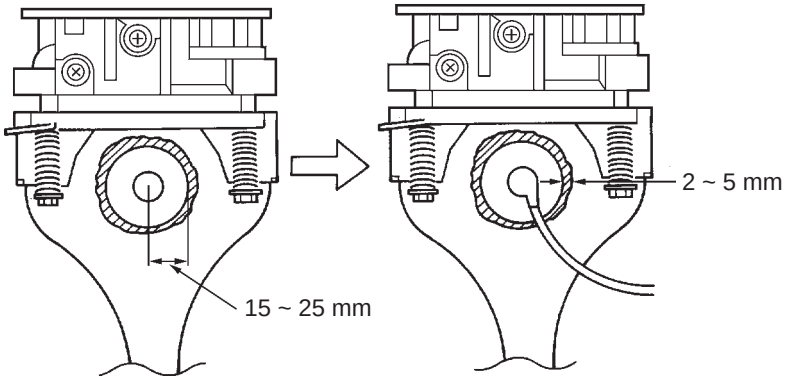
CAUTION: Align the Anode cable as illustrated on page 4.



ADJUSTING PROCEDURE IN REPLACING CRT

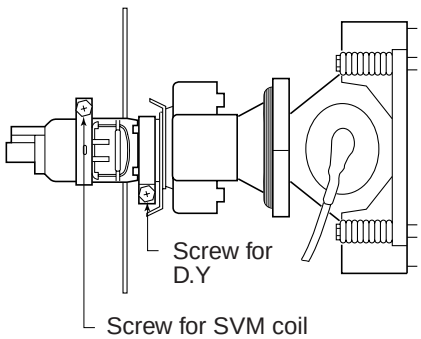
1. R.G.B. FOCUS ADJUSTMENT (page 6.)
2. PICTURE TILT ADJUSTMENT (page 6.)
3. USER CONVERGENCE CENTER CHECK (See owner's manual.)
4. CENTERING ADJUSTMENT (page 6.)
5. CONVERGENCE ADJUSTMENT (page 13.)
6. WHITE BALANCE ADJUSTMENT (page 12.)

Adjustments are complete.



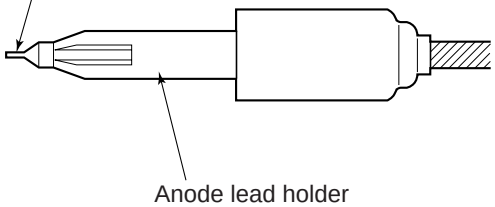
SERVICING PRECAUTIONS

■ Do not use a magnetized screw driver for screws of Deflection Yoke and Velocity Modulation Coil to avoid magnetization of electron gun. Magnetization of electron gun will degrade basic function and result in unbalance of right and left shift of user static convergence, and result in no variable quantity.



■ When replacing the anode cap assembly (CRT) or anode lead assembly (F.B.T.), remove the anode lead holder from old one and attach the holder again to new anode lead.

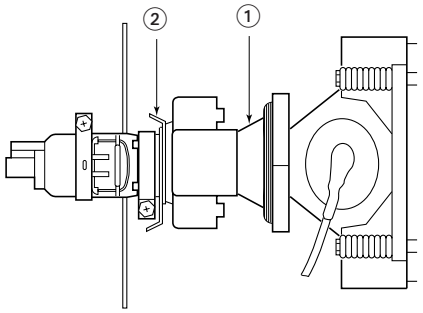
■ Check the point of anode lead in a straight line, if it is winding, please revise it.



WARNING : BEFORE SERVICING THIS CHASSIS, READ THE "X-RAY RADIATION PRECAUTION", "SAFETY PRECAUTION" AND "PRODUCT SAFETY NOTICE" ON PAGE 3 OF THIS MANUAL.

PICTURE TUBE COMPONENTS ADJUSTMENT

DESCRIPTION OF NECK COMPONENTS



① Deflection yoke and convergence yoke
The position on the neck is required most front (CRT funnel side) and the screw is fastened after rotating yoke adjusting picture tilt.

② Centering magnet
After adjusting picture tilt, picture position is finally fixed by this magnet.
In order to get maximum margin of user convergence control for center of screen, this magnet have to be used for center convergence adjustment.

PREPARATION
Operate the receiver for at least 5 minutes.

R, G, B FOCUS ADJUSTMENT

1. Before adjusting the R, G, B FOCUS, remove the 4 screws of Lens Assembly which is fixed on the CRT Assembly. (See page 4.)
   Then turn around the Lens Assembly by 180˚ to adjust the fastening screw (Fig. a) and fasten the 4 screws to secure Lens Assembly.
2. Select the adjustment mode. (See page 9.)
3. Press "7" button to display the built-in cross-hatch.
4. Press "0" and "RTN" buttons to make the picture a single Red color.
   100 button ..... to erase Red color
   0 button ..... to erase Green color
   RTN button ..... to erase Blue color
5. Loosen the fasten screw and adjust Red lense focus to best focusing point of picture center. Then fasten the screw. (See Fig. a.)

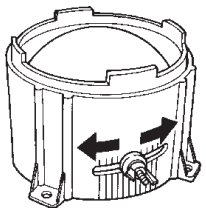


Fig. a

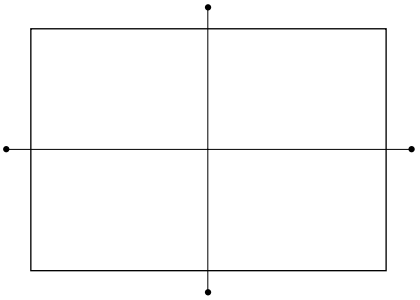
6. Adjust FOCUS VR "R" of FOCUS PACK to find best focusing point of picture center.
7. Repeat steps 3 to 5 for Green and Blue colors.

TILT ADJUSTMENT

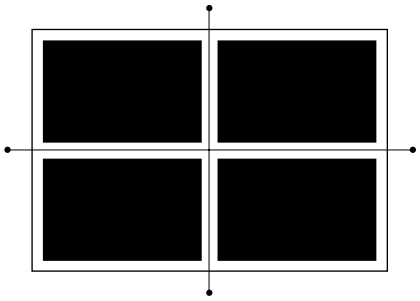
Rotate R, G, B deflection yoke so that picture becomes horizon, then fasten screw.

CENTERING ADJUSTMENT

1. Stretch a thread between two center slots of screen edge (top and bottom, left and right).

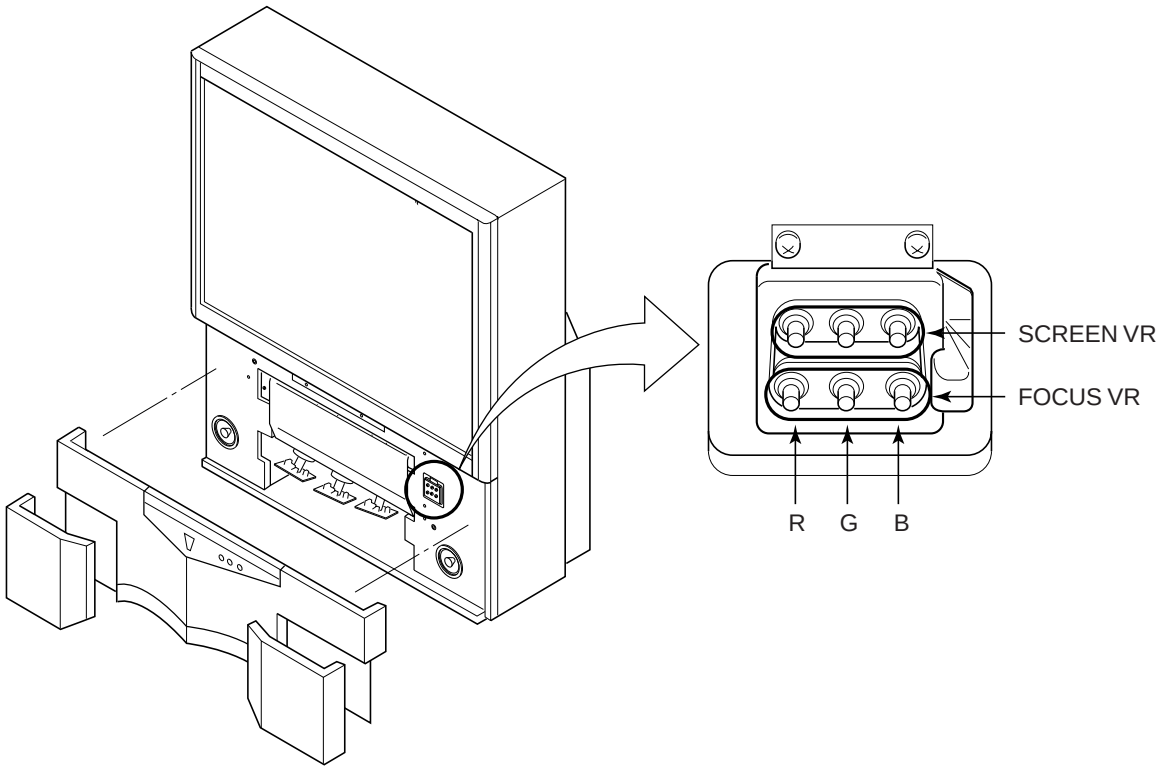


2. Select the adjustment mode.
3. Press TV/VIDEO button on the Remote Control to display the white cross-bar.



4. Perform VCEN adjustment. (See page 11.)
5. Adjust G centering magnet so that the cross-bar pattern center comes to screen center.
6. Perform HEIGHT adjustment . (See page 12.)
7. Perform VERT. LINEARITY adjustment.
8. Perform WIDTH adjustment. (See page 12.)
9. Check whole quality of green line.
10. Adjust R, B centering magnet so that the cross-bar pattern center comes to screen center.

LOCATION OF SCREEN AND FOCUS VR'S



REPLACEMENT OF THE CRT

Service parts are provided for each R, G and B.
The contents of the parts are as follows.

		R	G	B
HITACHI CRT	50A50	23796001	23005397	23796003
	50A60	23005114	23005115	↑
	55A60	23005242	↑	↑
	61A60	23005249	↑	23796486

REPLACEMENT OF HIGH VOLTAGE CABLE

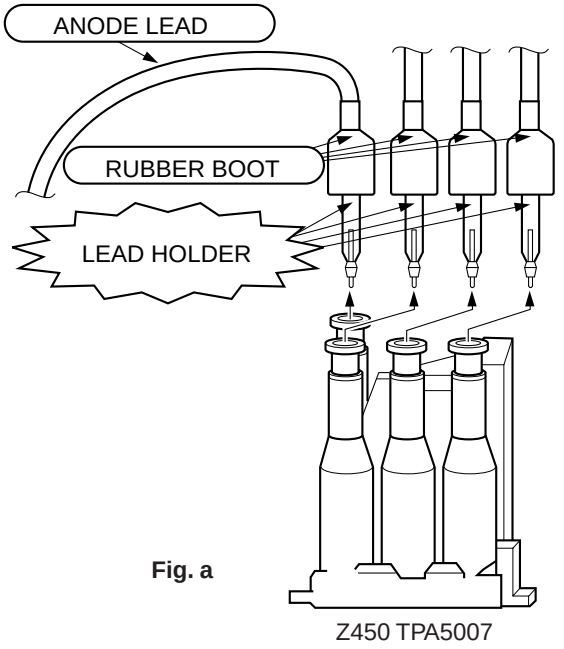


Fig. a

1. When replacing Anode Lead or Anode Cap with new one, remove Lead Holder from old lead as shown in figure below, and put it on new lead. Do not throw away Lead Holder.

NOTE : THE LEAD HOLDER IS ATTACHED TO TPA5007 (Z450), BUT IS NOT ATTACHED TO ANODE LEAD AND ANODE CAP. RUBBER BOOT IS ATTACHED TO ANODE LEAD AND ANODE CAP.

2. Detaching Lead Holder

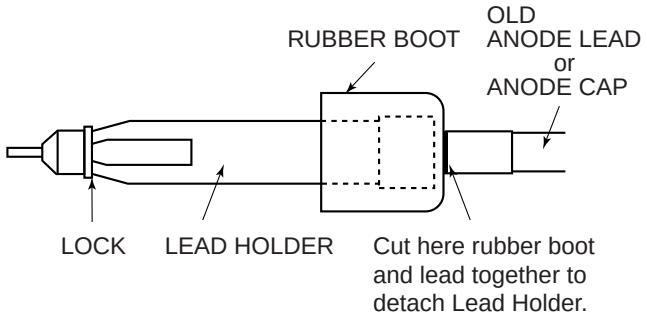


Fig. b

SERVICE MODE

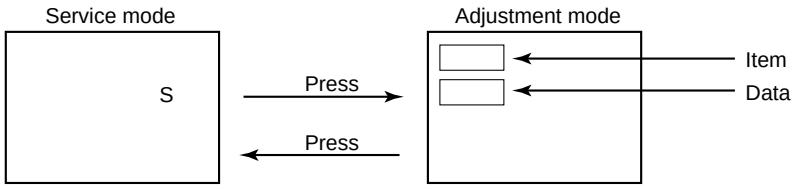
1. ENTERING TO SERVICE MODE

1) Press MUTE button once on Remote Control.
2) Press MUTE button again to keep pressing.
3) While pressing the MUTE button, press MENU button on TV set.

(Service mode display)

2. DISPLAYING THE ADJUSTMENT MENU

1) Press MENU button on TV.



3. KEY FUNCTION IN THE SERVICE MODE

The following key entry during display of adjustment menu provides special functions.

Screen adjustment mode ON/OFF:	TV (ANT)/VIDEO button (on TV)
Selection of the adjustment items :	Channel ▲/▼ (on TV or Remote)
Change of the data value :	Volume ▲/▼ (on TV or Remote)
Adjustment menu mode ON/OFF :	MENU button (on TV)
Initialization of the memory (QA02) :	RECALL+Channel button on TV (▲)
Initialization of the self diagnostic data:	RECALL+Channel button on TV (▼)

“RCUT” selection :	1 button
“GCUT” selection :	2 button
“BCUT” selection :	3 button
“SCNT” selection :	4 button
“SCOL” selection :	5 button
“TNTC” selection :	6 button
Convergence adj :	7 button
Test audio signal ON/OFF (1kHz) :	8 button
Self diagnostic display :	9 button

4. SELECTING THE ADJUSTING ITEMS

1) Every pressing of CHANNEL ▲ button in the service mode changes the adjustment items in the order of table-2. (▼ button for reverse order)

Refer to table-2 for preset data of adjustment mode.
(See SETTING & ADJUSTING DATA on page 17)

5. ADJUSTING THE DATA

1) Pressing of VOLUME ▲ or ▼ button will cahnge the value of data in the range from 00H to FFH. The variable range depends on the adjusting item.

6. EXIT FROM SERVICE MODE

1) Pressing POWER button to turn off the TV once.

■ INITIALIZATION OF MEMORY DATA OF QA02

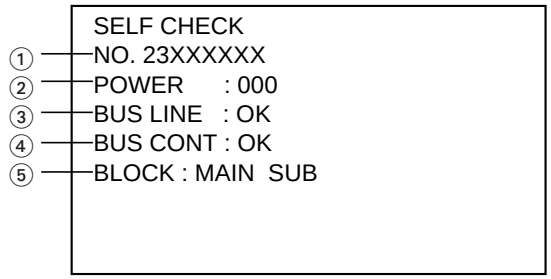
After replacing QA02, the following initialization is required.

1. Enter the service mode, then select any register item.
2. Press and hold the RECALL button on the Remote, then press the CHANNEL ▲ button on the TV. The initialization of QA02 has been complated.
3. Check the picture carefully. If necessary, adjust any adjustment item above. Perform “Programming Channel Memory” on the owner's manual.

CAUTION: Never attempt to initialize the data unless QA02 has been replaced.

7. SELF DIAGNOSTIC FUNCTION

1) Press “9” button on Remote Control during display of adjustment menu in the service mode. The diagnosis will begin to check if interface among IC’s are executed properly.
2) During diagnosis, the following displays are shown.

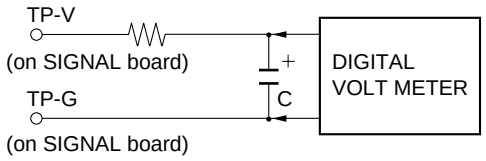
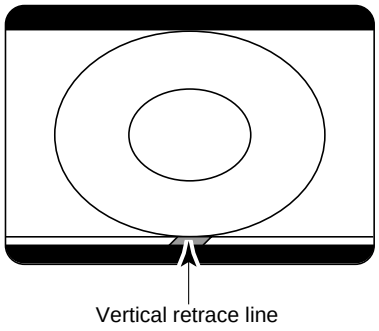
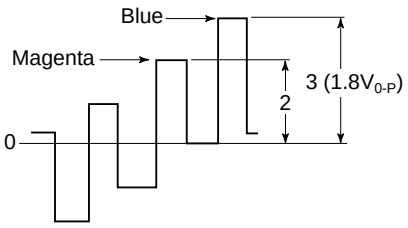
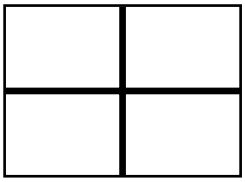


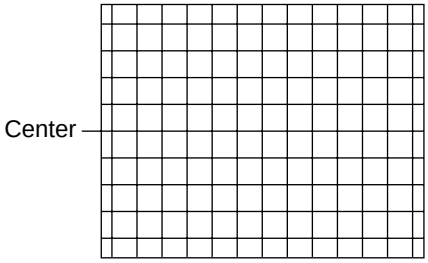
① Part number of microprocessor (QA01)
② Operation number of protection circuit (current limiter) . . . . “000” is normal.
③ BUS line check
- “OK” ..... Normal
- “SCL-GND” or “NG” ..... SCL-GND short circuit
- “SDA-GND” or “NG” ..... SDA-GND short circuit
- “SCL-SDA” or “NG” ..... SCL-SDA short circuit

④ BUS line ACK (acknowledge) check
- “OK” ..... Normal
- Display of Location Number . . . . NG
- (Display example)
- “QA02 NG”, “H001 NG”, “Q501 NG” etc.
- Note: The indication of failure place is only one place though failure places are plural. When repair of a failure place finishes, the next failure place is indicated. (The order of priority of indication is left side.)

⑤ Sync. signal check
- Green display ..... Normal
- Red display ..... NG
  - MAIN ..... Main sync
  - SUB ..... Sub sync (when turn on the PIP)

ELECTRICAL ADJUSTMENT

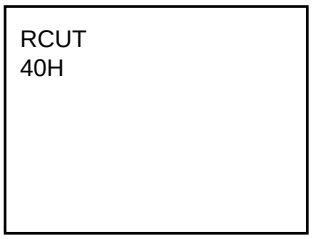
ITEM	ADJUSTMENT PROCEDURE
VERTICAL POSITION (VCEN)	1. Call up the adjustment mode display, then select item VCEN. 2. Press the VOLUME ▲ or ▼ button to get the voltage +30 ±10 mV. 3. Measuring method of voltage as follows. 
SUB-BRIGHTNESS (BRTC)	1. Constrict the picture height until the vertical retrace line appears adjusting the HEIGHT control on the MAIN board. 2. Adjust the CONTRAST to the minimum and BRIGHTNESS to the center. 3. Enter the service mode, then select "**BRTC**" register. 4. Adjust the data value so the belt of vertical retrace line just disappear. 5. Adjust the HEIGHT control. * Adjust the SUB-BRIGHTENESS after adjusting the WHITE BALANCE. 
SUB-COLOR (SCOL) SUB-TINT (TNTC)	1. Receive color-bar signal from color-bar generator. 2. Adjust the BRIGHTNESS and CONTRAST to the center (RESET status). 3. Connect oscilloscope to TP501on the MAIN board. 4. Enter the service mode, then select "**SCOL**". 5. Temporarily adjust the data value to achieve about $1V_{0\text{-}p}$ of blue bar. 6. Select "**TNTC**" register. 7. Adjust the data value to obtain the blue bar to magenta bar ratio of 3:2 as shown. 8. Select "**SCOL**" register. 9. Adjust the data value to achieve $1.8V_{0\text{-}p}$ of blue bar on scope. 10. Check the picture with off-air signal. 
SUB-CONTRAST (SCNT)	1. Tune in a color program and adjust the BRIGHTNESS and CONTRAST to normal mode(RESET). 2. Enter the service mode, then select "SCNT" register. 3. Change "SCNT" data to13H. 4. Check the picture contrast.
PICTURE POSITION	1. Receive the pattern signal which shows it's center on the screen. 2. Adjust the picture position alternately by turning CENTERING MAGNETS for proper picture position. 3. Check the picture with off-air signal. 

ITEM	ADJUSTMENT PROCEDURE
HEIGHT (HIT)	1. Call up the adjustment mode display, then select the item HIT. 2. Press the VOLUME ▲ or ▼ button to get the picture so the top of raster begins to lack. 3. Press the VOLUME ▲ button to advance the data by 10 steps. Note : Check the vertical picture position is correct.
WIDTH (WID)	1. Call up the adjustment mode display, then select the item **WID**. 2. Press the VOLUME ▲ or ▼ button to get the picture so the left and right edges of raster begins to lack. 3. Press the VOLUME ▲ or ▼ button to advance the data by 10 steps. Note : Check the horizontal picture position is correct.
VERTICAL LINEARITY (VLIN)	1. Call up the adjustment mode display, then select the item **VLIN**. 2. Receive cross-hatch pattern signal. 3. Press the VOLUME ▲ or ▼ button to obtain the picture of the best linearity. 4. Then readjust the item HIT. 
WHITE BALANCE (RCUT) (GCUT) (BCUT) (RDRV) (BDRV)	1. Press RESET button on TV or remote hand set. 2. Call up the adjustment mode display, then adjust the data of items **RCUT**, **GCUT** and **BCUT** to “40”. 3. Press TV (ANT)/VIDEO button on TV. 4. Gradually rotate R, G and B SCREEN volume of FOCUS PAC (page 7) clockwise or counterclockwise until the raster appears slightly on the CRT through the each lens, and leave them. (Look into the lens in order to check the raster.) 5. Press TV (ANT)/VIDEO button on TV again. 6. Exit from service mode. 7. Receive white laster pattern signal, and adjust the contrast to the minimum to make white picture to low light. 8. Adjust the data of items **RCUT**, **GCUT** and **BCUT** for low light area. 9. Adjust the contrast to the maximum to make white picture to high light. 10. Adjust the data of items **GDRV** and **BDRV** Controls for proper white-balanced picture in high light area. 11. Check the white balance in both low and high light areas. If necessary, perform again steps from 7 to 9. * The data of item GDRV changes red drive actually.

CONVERGENCE ADJUSTMENT

Adjust convergence from center to circumference in order.

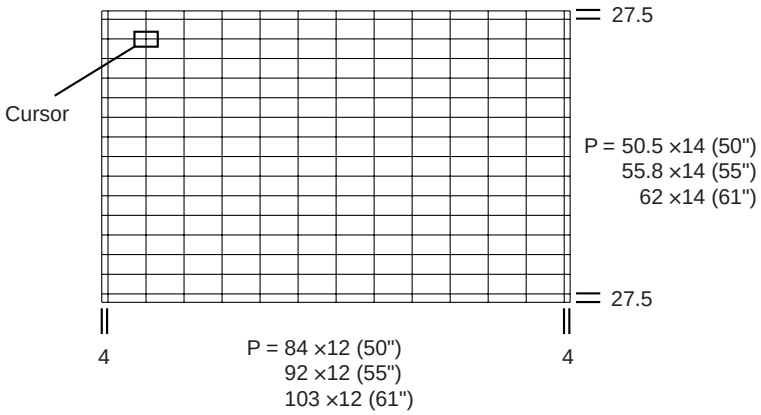
1. Select the adjustment mode following the steps on page 9.



KEY FUNCTION IN THE CONVERGENCE ADJUSTMENT:

Up :	2 button
Selet Green color:	3 button
Left :	4 button
Blinking of cursor ON/OFF:	5 button
Right:	6 button
Adjust mode ON/OFF:	7 button
Down:	8 button
Erase Green line:	0 button
Erase Red line:	100 button
Erase Blue line:	CHRTN (ENT) button

2. Press “7” button to display the built-in cross-hatch pattern.



Note:
Adjusting procedure in replacing convergence board.

1. User convergence center check. Make sure the best convergence setting is about the center of adjustable range.
2. CENTERING ADJUSTMENT
3. PICTURE POSITION ADJUSTMENT
4. HIT, WID ADJUSTMENT
5. CONVERGENCE ADJUSTMENT

The pattern includes three colors (R, G, B).
The cursor should be blinking in Red.
This means that the Red color is adjustable.
Adjustment around cursor can be done.

3. Press “3” button to select Green color to be adjusted.
4. Press “5” button to stop the blinking of cursor.
5. Press “2 (up)”, “8 (down)”, “4 (left)” or “6 (right)” to obtain the correct cross-hatch pattern as above.
   If necessary, the specified color line can be erased from the screen.
   100 button ..... to erase Red line
   0 button ..... to erase Green line
   RTN (ENT) button ..... to erase Blue line
6. Press “5” button to make the cursor blinking.
7. Press “2”, “8”, “4”, “6” buttons to move the cursor to other point to be adjusted.
8. Repeat steps 4 to 7.
9. Repeat steps 3 to 8 to adjust Red and Blue colors.
   Converge the selected color line into the Green line.
10. Press “7” button to enter the adjusted states.
    At this time, picture changes for about 1 second.
11. Press “7” button again to return to the normal picture.

NOTES

In many cases, color misconvergence may be corrected by returning HIT and WID data in main deflection side to initial adjusting values. Following cases will surely require readjustment of convergence.

CRT REPLACEMENT

When CRT is replaced, main deflection readjustment and color matching are required.
Perform following procedures.

1. Replace two CRT's of blue and red.
2. Perform horizontal adjustment for blue and red yokes on base of green CRT data. Mount yoke and velocity mod. coil alignment, pushing towards CRT without gap.
3. Adjust alignment of blue and red. (Refer Alignment adjustment for details.)
4. Rotating centering magnet, adjust CRT centers of red and blue to CRT center of green.
   (Picture position adjustment)
5. Adjust HIT and WID data of main deflection, and decide data at the most precise screen comparing to green data.
6. Adjust convergence of each screen picture for color matching. Do not move green one at this time.
7. After convergence adjustment of each screen picture finishes, replace green CRT.
   For green CRT as well, repeat steps 2 to 5 above on bases of red and blue color matching to adjust convergence.

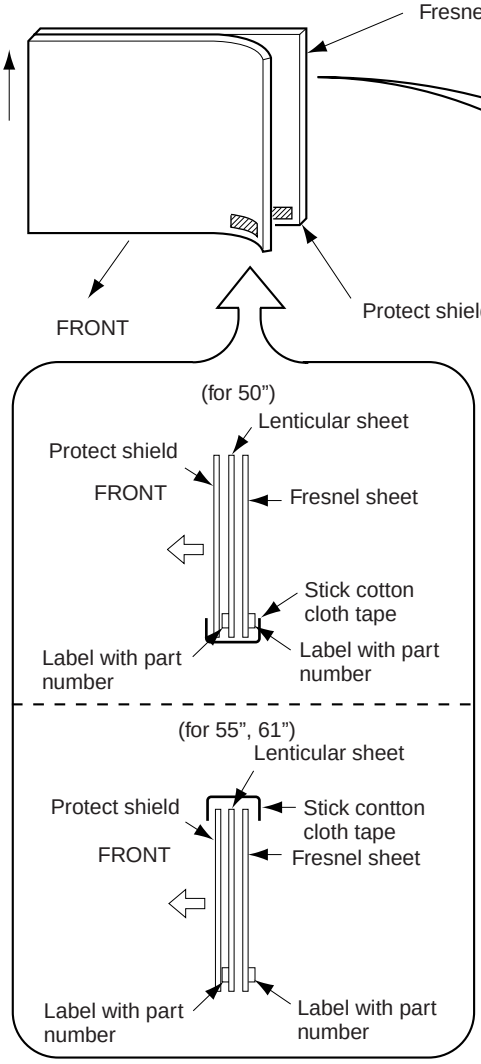
REPLACING CONVERGENCE UNIT

When replacing convergence unit, all picture screens require readjustment basically, but the following method allows process be reduced considerably.

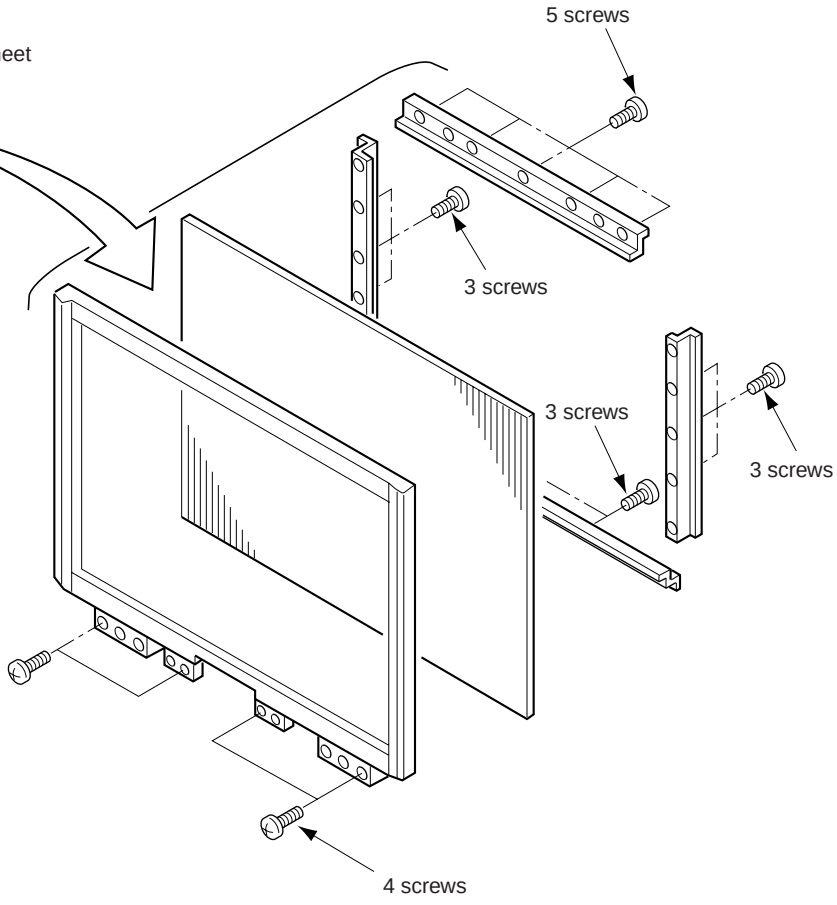
1. Replace the memory (Q713) on defective unit with memory on new unit. Mounting the unit on the SET after the above working realizes picture screen before replacement immediately.
2. Mount unit which has combination of old and new memories, on SET and turn it on. Screen shows whole picture looks like straightly shifted towards vertical or horizontal direction.
3. Adjust again centers of green, red and blue with centering magnets.
4. Check each picture screen for slight disparity of color and picture size. If necessary, add some adjustments of main deflection and color matching of convergence.

SCREEN AND MIRROR ALIGNMENTS

ASSEMBLING OF FRONT SCREEN



MOUNTING OF FRONT SCREEN



* Please refer to Mechanical Disassembly on page 23.

CAUTION : Do not hold the optical system parts (lens and mirror) with bare hand to avoid finger-prints on the surface of those parts.

HOW TO CLEAN LENS AND MIRROR

1. Be sure to remove sand dust with an air brush, etc.
2. When it is stained slightly, breathe upon it and wipe away with the specified cleaning cloth.
   For other stains than the above, wipe the stains away with the specified cloth into which a cleaning liquid has been soaked.

Cleaning liquid..... **LENS LUSTER** (Manufactured by Edmund Scientific Co.), etc.

HOW TO CLEAN SCREEN

When cleaning the screen, use a soft cloth so as not to damage the screen.

1. Wipe the screen with a dry cloth to remove moisture on the screen.

Note : Absolutely do not use detergent, water, alcohol, benzine, thinner, etc. for cleaning in order not to wipe away the black print on the surface.

CIRCUIT CHECKS

HIGH VOLTAGE CHECK

CAUTION: There is no HIGH VOLTAGE ADJUSTMENT on this chassis. Checking should be done following the steps below.

1. Connect an accurate high voltage meter to the anode of the picture tube.
2. Turn on the receiver. Set the BRIGHTNESS and CONTRAST to minimum (zero beam current).
3. High voltage must be measured below (B) kV.
   Refer to table-1 for high voltage (B).
   (See SETTING & ADJUSTING DATA on page 17)
4. Vary the BRIGHTNESS to both extremes to be sure the high voltage does not exceed the limit under any conditions.

CAUTION:
When the following parts fail, check the High Voltage after replacing.

Location No.	Name	Name
T461	Flyback Trans.	TFB3078ZD
C447	Capacitor	3900pF, ±3%
C406	Capacitor	1500pF, ±3%
C407	Capacitor	4700pF, ±3%

ANODE VOLTAGE MEASURING METHOD

CAUTION: Take extra precaution when measuring this high voltage. High voltages are also present in surrounding circuit boards (CRT DRIVE assembly, DEFLECTION assembly, and POWER SUPPLY assembly).

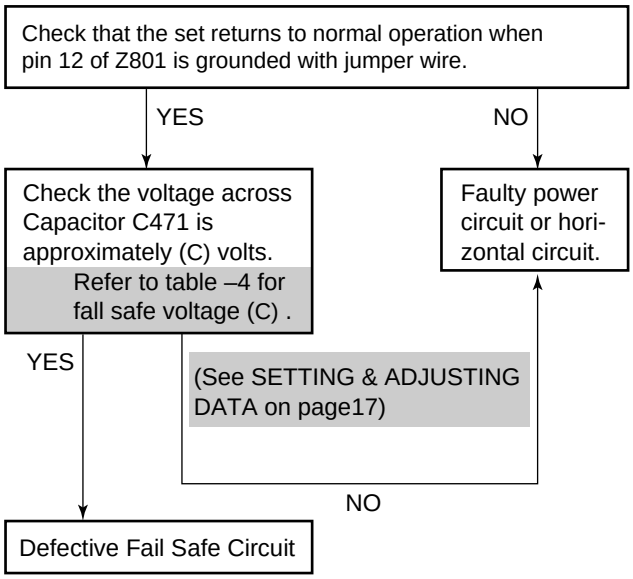
1. Disconnect the FBT anode cable as outlined below. Measure high voltage at the point where the cable enters the FBT.
2. Holding the rubber cover firmly, turn it counterclockwise and check that the lock has been disengaged. (See Fig. b on page 8.)
3. Determine the extent of the rubber cover before disconnecting the cable.
4. Pull straight up the anode cable to disconnect.
5. When reconnecting the cable, proceed in the reverse order. After reconnecting, tug on the cable to check that it is secure.

FS CIRCUIT CHECK

The Fail Safe (FS) circuit check is indispensable for the final check in servicing. Checking should be done following the steps below.

1. Turn the receiver on.
2. Temporarily short TP- (R) and TP- (X) on the DEF/POWER Board with a jumper wire.
   Raster and sound will disappear.
3. The receiver must remain in this state even after removing the jumper wire. This is the evidence that the FS circuit is functioning properly.
4. To obtain a picture again, temporarily turn the receiver off and allow the FS circuit more than 5 seconds to reset. Then turn the receiver on to produce a normal picture.

Troubleshooting Guide for Fail Safe Circuit


Check that the set returns to normal operation when pin 12 of Z801 is grounded with jumper wire.
YES
NO
Check the voltage across Capacitor C471 is approximately (C) volts.
Refer to table –4 for fall safe voltage (C) .
Faulty power circuit or horizontal circuit.
YES
(See SETTING & ADJUSTING DATA on page17)
NO
Defective Fail Safe Circuit

CHAPTER 2 SPECIFIC INFORMATIONS

SETTING & ADJUSTING DATA

【SAFETY INSTRUCTIONS】

		43", 50", 55", 61"
HIGH VOLTAGE AT ZERO BEAM:	(A)	31.3 kV
MAX HIGH VOLTAGE:	(B)	32.4 kV

Table-1

【SERVICE MODE】

ADJUSTING ITEMS AND DATA IN THE SERVICE MODE:

Item	Name of adjustment	Preset	Date
RCUT	R CUTOFF	40H	←
GCUT	G CUTOFF	40H	←
BCUT	B CUTOFF	40H	←
GDRV	G DRIVE	40H	←
BDRV	B DRIVE	40H	←
CNTX	SUB CONT MAX	7FH	←
BRTC	SUB-BRIGHT	80H	←
COLC	SUB-COLOR	50H	←
TNTC	SUB-TINT	44H	←
SCOL	SUB COLOR	05H	←
SCNT	SUB-CONTRAST	10H	←
HPOS	HORIZ. POSITION	19H	←
VPOS	VERT. POSITION	00H	←
HIT	HEIGHT	64H	←
LIN	V-LINEARITY	12H	←
VSC	V-S CORRECTION	10H	←
WID	PICTURE WIDTH	28H	23H
VPS	V-SHIFT	18H	←

Item	Name of adjustment	Preset	Date
VCP	V-COMPENSATE	0AH	←
PARA	E-W PARABOLA (DPC)	29H	←
CNR	E-W CORNER	08H	←
TRAP	TRAPEZIUM	10H	←
HCP	H-COMPENSATE	00H	←
VFC	V-F CORRECT	00H	←
PHUE	PIP TINT	00H	←
PCNT	PIP CONT	00H	←
PCOL	PIP COLOR	0FH	←
RGBB	RGB BRIGHT	54H	←
PROF	PIP R OFFSET	00H	←
PBOF	PIP B OFFSET	00H	←
PGOF	PIP YG OFFSET	00H	←
STRH	START H	67H	←
STRP	START PTN	8AH	←
VLD	VLD	41H	←
VCEN	V POSITION	81H	←
TVOP	TV OPTION	00H	←

Table-2

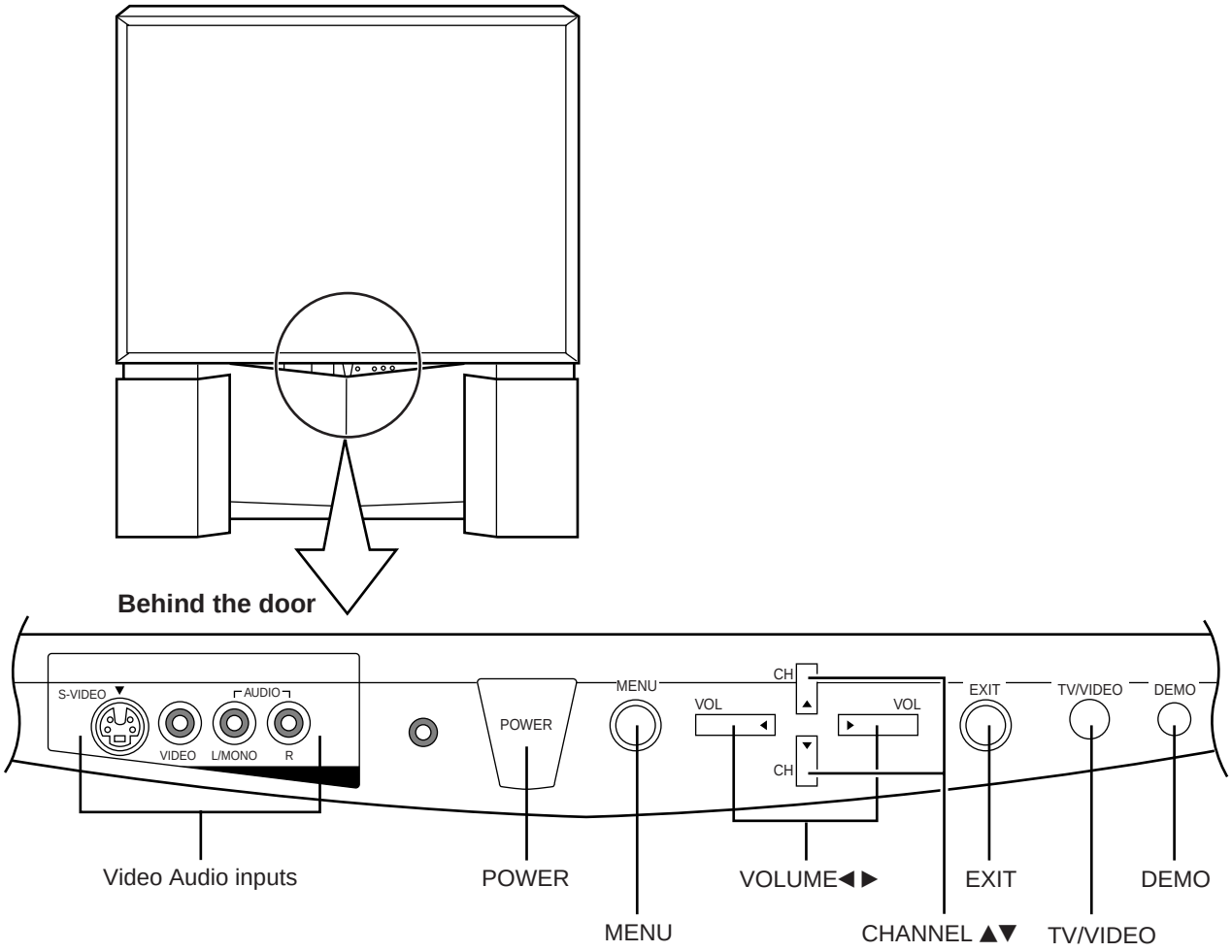
【CIRCUIT CHECKS】

FBT DETECTION VOLTAGE	(C)	24.5V

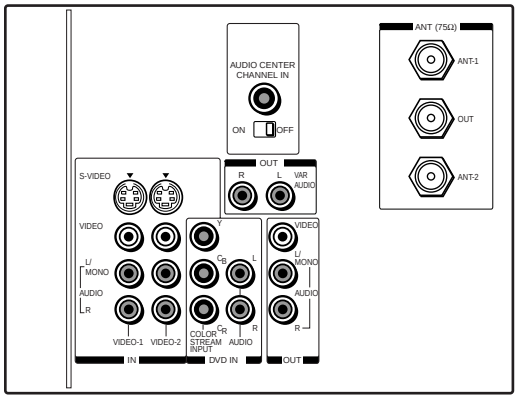
Table-3

LOCATION OF CONTROLS (Representative : 50A60)

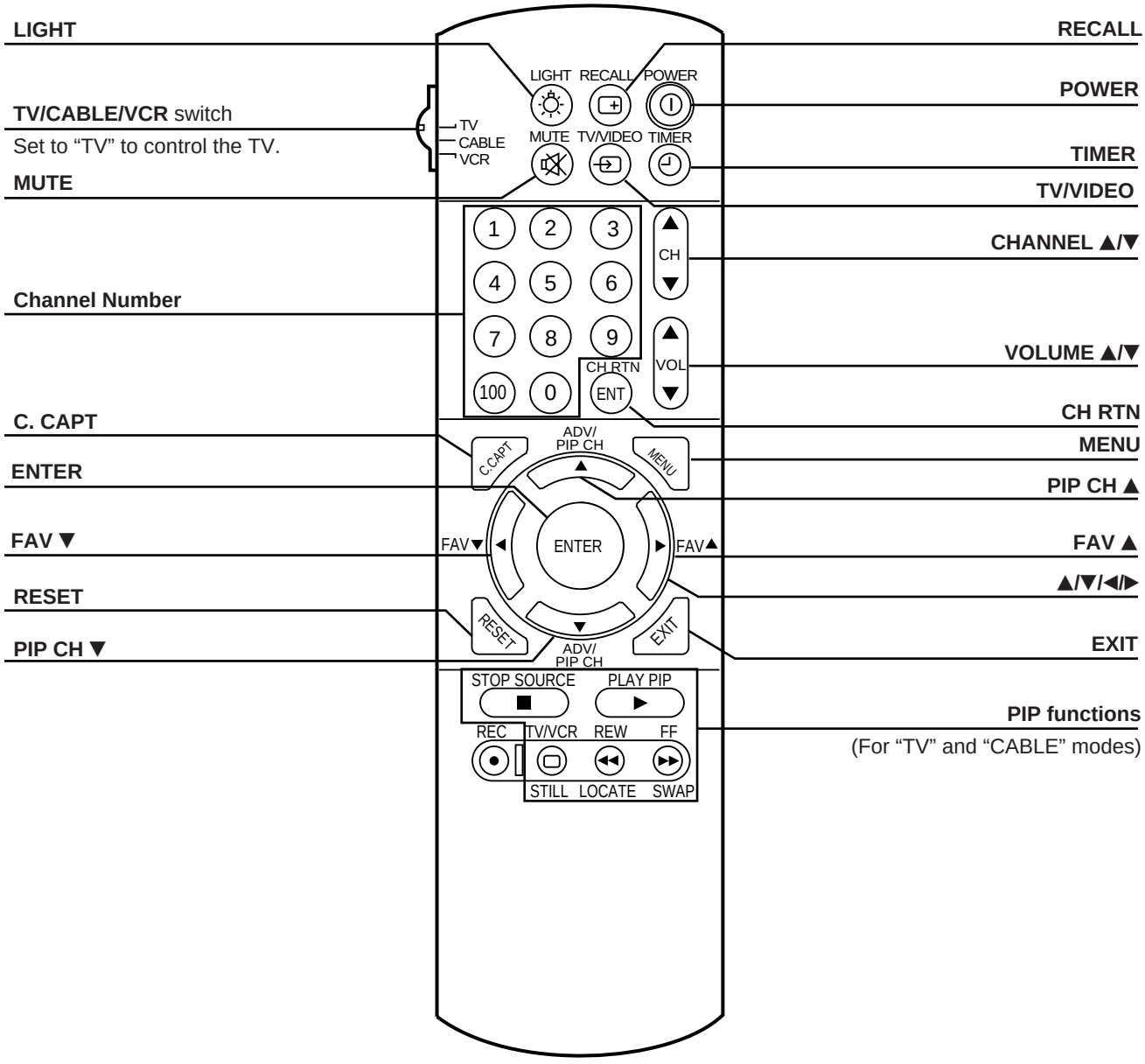
TV front



TV rear



Remote Control



PROGRAMMING CHANNEL MEMORY

The channel memory is the list of TV channel numbers the TV tunes in when you press the CHANNEL ▲ or ▼ button.
First, use the TV/CABLE and CH PROGRAM functions to preset all active channels in your area automatically.
If necessary, arrange the preset channels with the ADD/ERASE functions so that you can tune into only desired channels.
Note: If you utilize both ANT-1 and ANT-2 terminals for some model, perform programming channels for each input source.

TV/CABLE function

1. Press **MENU**, then press ► or ◄ until the SET UP menu appears.
2. Press ▼ (or ▲) until “TV/CABLE” is highlighted.
3. Press ► or ◄ to highlight either “TV” or “CABLE”, whichever you use.

CH PROGRAM function

1. Select “CH PROGRAM” following steps 1 and 2 above.
2. Press ► or ◄ to start channel programming.
   The TV will automatically cycle through all the TV or CABLE channels selected by the TV/CABLE function, and store active channels in the channel memory.
3. When channel programming is complete, you will see the message to the right appears.
4. Press **CHANNEL** ▲ or ▼ to make sure the channel programming has been done properly.

ADD/ERASE function

After performing the CH PROGRAM function, you can add or erase specific channels.

1. Select the channel you want to erase using the **CHANNEL** ▲ or ▼ button, or select the channel you want to add using the **Channel Number** buttons.
2. Press **MENU**, then press ► or ◄ until the SET UP menu appears.
3. Press ▼ (or ▲) until “ADD/ERASE” is highlighted.
4. Press ► or ◄ :
   To erase the channel press the button until “ERASE” is highlighted.

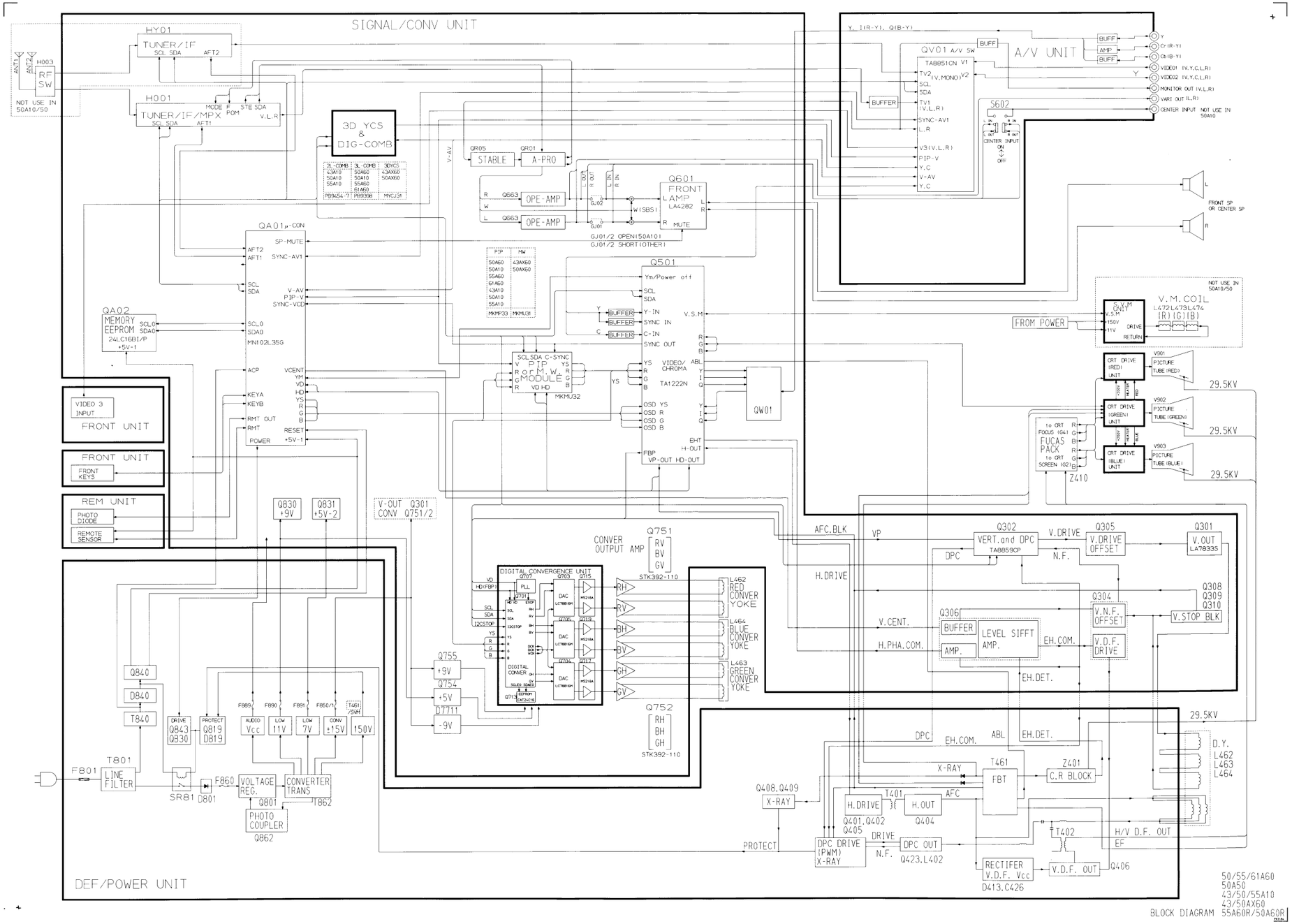
   To add the channel press the button until “ADD” is highlighted.
5. Repeat steps 1 to 4 for other channels.

You have now completed the channel programming.

Note: The CHANNEL ▼/▲ buttons on the TV function as the ▼/▲ buttons while a menu is on the screen.

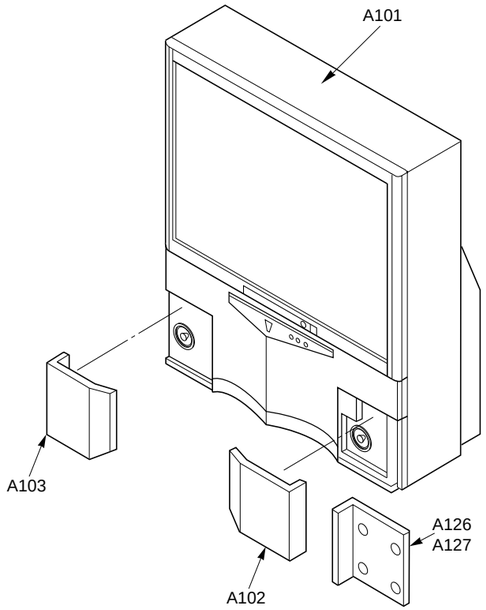
* Please refer to owner's manual in detail.

CIRCUIT BLOCK DIAGRAM

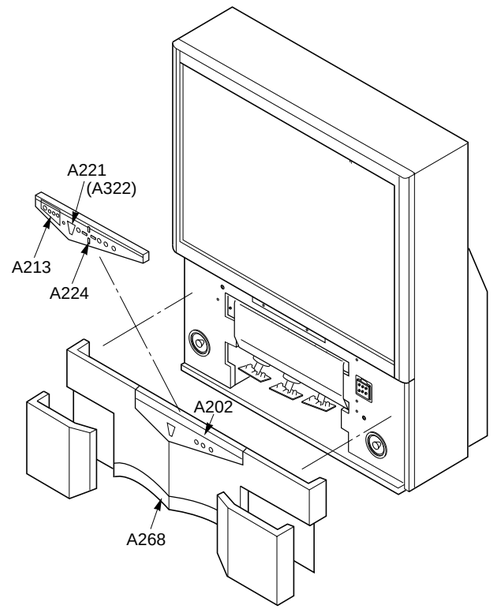


MECHANICAL DISASSEMBLY

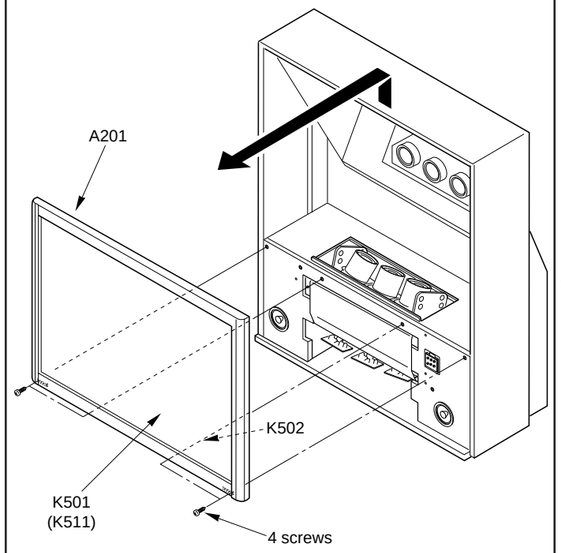
1 Speaker Grille Removal



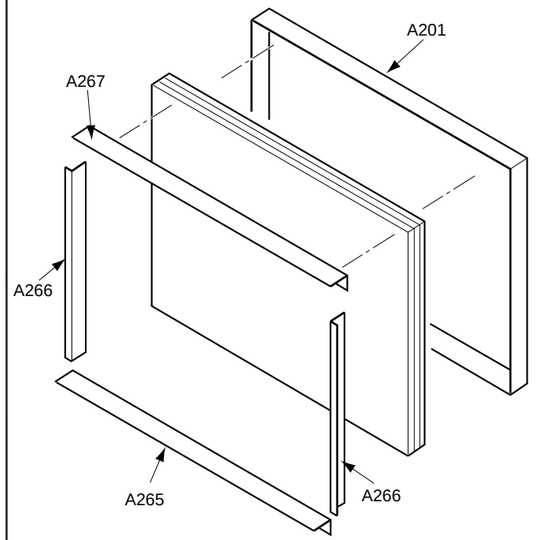
2 Control Panel Removal



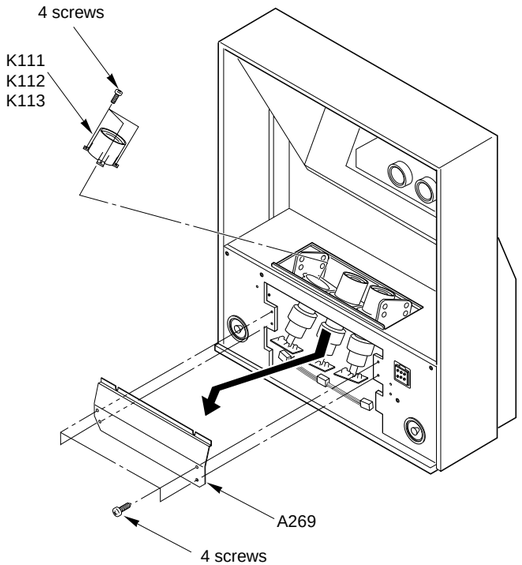
3 Front Mask Removal



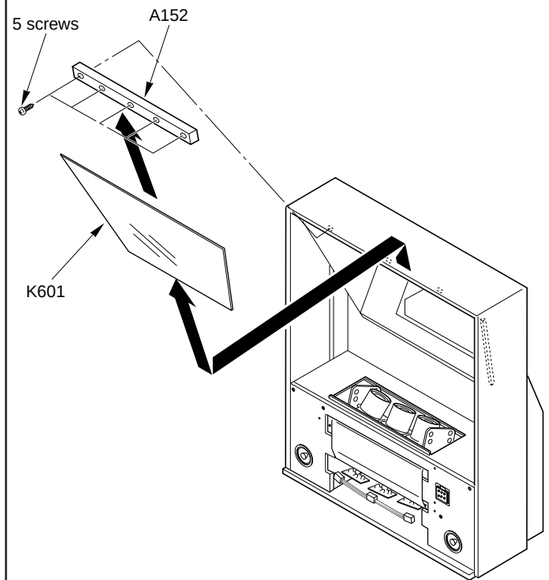
4 Mask Removal



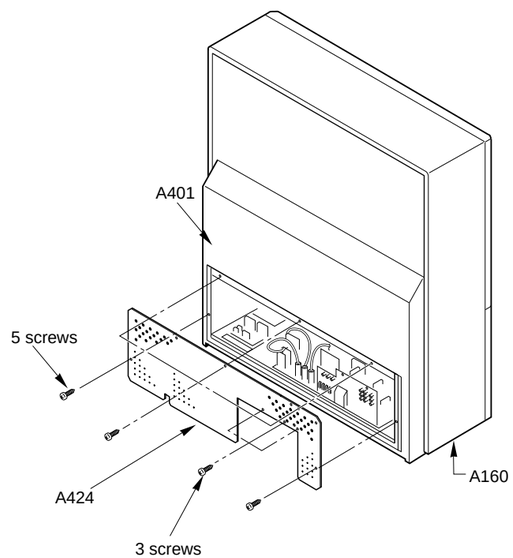
5 Shield Plate, Lens Removal



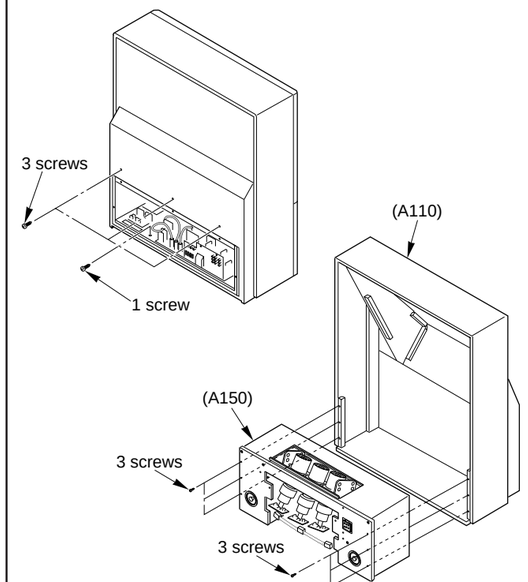
6 Mirror Removal



7 Back Board Removal



8 Light Box Removal



CHASSIS REPLACEMENT PARTS LIST

WARNING: BEFORE SERVICING THIS CHASSIS, READ THE "X-RAY RADIATION PRECAUTION", "SAFETY PRECAUTION" AND "PRODUCT SAFETY NOTICE" ON PAGE 3 OF THIS MANUAL.

CAUTION: The international hazard symbols "⚠" in the schematic diagram and the parts list designate components which have special characteristics important for safety and should be replaced only with types identical to those in the original circuit or specified in the parts list. The mounting position of replacements is to be identical with originals. Before replacing any of these components, read carefully the PRODUCT SAFETY NOTICE. Do not degrade the safety of the receiver through improper servicing.

NOTICE:
- *The part number must be used when ordering parts, in order to assist in processing, be sure to include the Model number and Description.*
- *The PC board assembly with ∗ mark is no longer available after the end of the production.*

Models : 50A60/50A50/55A60/61A60

Capacitors	CD	:	Ceramic Disk	PF	:	Plastic Film	EL	: Electrolytic
Resistors	CF	:	Carbon Film	CC	:	Carbon Composition	MF	: Metal Film
	OMF	:	Oxide Metal Film	VR	:	Variable Resistor	FR	: Fusible Resistor

(All CD and PF capacitors are ±5%, 50V and all resistors, ±5%, 1/6W unless otherwise noted.)

Location No.	Part No.	Description
CAPACITORS		
C102	24665221	EL, 220μF, ±20%, 10V
C105	24815102	Chip, 0.001μF, ±10%
C106	24669479	EL, 4.7μF, ±20%, 50V
C107	24666221	EL, 220μF, ±20%, 16V
C112	24665221	EL, 220μF, ±20%, 10V (50A60/55A60/61A60)
C115	24815102	Chip, 0.001μF, ±10% (50A60/55A60/61A60)
C117	24666221	EL, 220μF, ±20%, 16V (50A60/55A60/61A60)
C151	24815102	Chip, 0.001μF, ±10% (50A60/55A60/61A60)
C201	24666100	EL, 10μF, ±20%, 16V
C203	24092178	Chip, 0.1μF, ±10%, 25V
C204	24669010	EL, 1μF, ±20%, 50V
C205	24206229	EL, 2.2μF, ±20%, 50V
C206	24666100	EL, 10μF, ±20%, 16V
C207	24781390	Chip, 39pF, SL
C208	24781390	Chip, 39pF, SL
C209	24781390	Chip, 39pF, SL
C212	24666100	EL, 10μF, ±20%, 16V
C213	24092616	Chip, 0.33μF, ±10%, 16V
C220	24709100	EL, 10μF, ±20%, 200V
C301	24815683	Chip, 0.068μF, ±10%
C302	24092463	Chip, 0.22μF, ±10%, 16V
C303	24666101	EL, 100μF, ±20%, 16V
C304	24092178	Chip, 0.1μF, ±10%, 25V
C305	24815103	Chip, 0.01μF, ±10%
C306	24815102	Chip, 0.001μF, ±10%
C307	24617912	EL, 2.2μF, ±10%, 50V
C309	24815102	Chip, 0.001μF, ±10%
C311	24815103	Chip, 0.01μF, ±10%
C312	24815102	Chip, 0.001μF, ±10%
C313	24092573	Chip, 0.47μF, ±10%, 16V
C314	24092178	Chip, 0.1μF, ±10%, 25V
C315	24666222	EL, 2200μF, ±20%, 16V
C316	24666101	EL, 100μF, ±20%, 16V
C317	24815222	Chip, 0.0022μF, ±10%
C318	24815182	Chip, 0.0018μF, ±10%
C319	24667101	EL, 100μF, ±20%, 25V

Location No.	Part No.	Description
C320	24667101	EL, 100μF, ±20%, 25V
C321	24667101	EL, 100μF, ±20%, 25V
C322	24815393	Chip, 0.039μF, ±10%
C323	24815563	Chip, 0.056μF, ±10%
C324	24669101	EL, 100μF, ±20%, 50V
C325	24082057	PF, 0.22μF, 100V
C326	24092463	Chip, 0.22μF, ±10%, 16V (50A60/55A60/61A60)
C327	24092463	Chip, 0.22μF, ±10%, 16V
C328	24082260	PF, 4700pF, 100V
C329	24669100	EL, 10μF, ±20%, 50V (50A60/55A60/61A60)
C330	24085946	EL, 10μF, ±20%, 16V, Non-Polar (50A60/55A60/61A60)
C331	24815333	Chip, 0.033μF, ±10%
C332	24669221	EL, 220μF, ±20%, 50V
C333	24693473	PF, 0.047μF, 100V
C334	24591471	PF, 470pF
C335	24092178	Chip, 0.1μF, ±10%, 25V (50A60/55A60/61A60)
C336	24815472	Chip, 0.0047μF, ±10% (50A60/55A60/61A60)
C340	24092463	Chip, 0.22μF, ±10%, 16V
C350	24669229	EL, 2.2μF, ±20%, 50V
C351	24092178	Chip, 0.1μF, ±10%, 25V
C352	24669229	EL, 2.2μF, ±20%, 50V
C401	24092178	Chip, 0.1μF, ±10%, 25V
C401	24214821	CD, 820pF, ±10%, 500V
C402	24214391	CD, 390pF, ±10%, 500V
C402	24815223	Chip, 0.022μF, ±10%
C403	24678100	EL, 10μF, ±20%, 200V
C404	24212152	CD, 1500pF, ±10%
C404	24669229	EL, 2.2μF, ±20%, 50V
C405	24567124	PF, 0.12μF
⚠C406	24082823	PF, 1500pF, ±3%, 1800V
⚠C407	24082946	PF, 4700pF, ±3%, 1500V
⚠C408	24820123	PF, 0.012μF, ±10%, 630V
C410	24095900	PF, 3.3μF, ±10%, 100V
C412	24828473	PF, 0.047μF, 200V
C413	24214221	CD, 220pF, ±10%, 500V
⚠C414	24095782	PF, 0.47μF, 400V

Location No.	Part No.	Description
C415	24092484	CD, 1500pF, ±10%, 2kV (50A60/55A60/61A60)
C416	24828333	PF, 0.033μF, 200V
C417	24679229	EL, 2.2μF, ±20%, 250V
C418	24679330	EL, 33μF, ±20%, 250V
C419	24669479	EL, 4.7μF, ±20%, 50V
C423	24640908	EL, 33μF, ±20%, 160V
C426	24211222	CD, 2200pF, ±10%, 2kV (50A60/55A60/61A60)
C427	24828473	PF, 0.047μF, 200V
C429	24591102	PF, 1000pF
C430	24567103	PF, 0.01μF
C431	24567103	PF, 0.01μF
C432	24567683	PF, 0.068μF
C433	24666100	EL, 10μF, ±20%, 16V
C434	24679479	EL, 4.7μF, ±20%, 250V
C435	24820222	PF, 0.0022μF, 630V
⚠C447	24082944	PF, 3900pF, ±3%, 1500V
⚠C448	24820123	PF, 0.012μF, ±10%, 630V
C450	24815103	Chip, 0.01μF, ±10%
C451	24815222	Chip, 0.0022μF, ±10%
C452	24666101	EL, 100μF, ±20%, 16V
C481	24666101	EL, 100μF, ±20%, 16V
C482	24567223	PF, 0.022μF
C484	24501102	PF, 0.001μF
C485	24567104	PF, 0.1μF
C497	24567474	PF, 0.47μF
C498	24669479	EL, 4.7μF, ±20%, 50V
C501	24815103	Chip, 0.01μF, ±10%
C502	24815103	Chip, 0.01μF, ±10%
C503	24665101	EL, 100μF, ±20%, 10V
C504	24815222	Chip, 0.0022μF, ±10%
C505	24774120	Chip, 12pF, CH
C508	24666100	EL, 10μF, ±20%, 16V
C509	24666101	EL, 100μF, ±20%, 16V
C510	24666101	EL, 100μF, ±20%, 16V
C511	24815103	Chip, 0.01μF, ±10%
C512	24206228	EL, 0.22μF, ±20%, 50V
C513	24815103	Chip, 0.01μF, ±10%
C514	24092178	Chip, 0.1μF, ±10%, 25V
C515	24092178	Chip, 0.1μF, ±10%, 25V
C517	24774010	Chip, 1pF, ±0.25pF, CH
C520	24666101	EL, 100μF, ±20%, 16V
C531	24666101	EL, 100μF, ±20%, 16V
C532	24666100	EL, 10μF, ±20%, 16V
C601	24815102	Chip, 0.001μF, ±10%
C602	24815102	Chip, 0.001μF, ±10%
C603	24669100	EL, 10μF, ±20%, 50V
C604	24669100	EL, 10μF, ±20%, 50V
C605	24667101	EL, 100μF, ±20%, 25V
C606	24667101	EL, 100μF, ±20%, 25V
C607	24567104	PF, 0.1μF
C608	24567104	PF, 0.1μF
C609	24669102	EL, 1000μF, ±20%, 50V
C610	24669102	EL, 1000μF, ±20%, 50V
C611	24667221	EL, 220μF, ±20%, 25V
C612	24666470	EL, 47μF, ±20%, 16V
C621	24206479	EL, 4.7μF, ±20%, 50V
C622	24206108	EL, 0.1μF, ±20%, 50V
C623	24814472	Chip, 0.01μF, +80%, -20%
C624	24206479	EL, 4.7μF, ±20%, 50V
C625	24206479	EL, 4.7μF, ±20%, 50V
C626	24206479	EL, 4.7μF, ±20%, 50V
C627	24206479	EL, 4.7μF, ±20%, 50V

Location No.	Part No.	Description
C628	24206100	EL, 10μF, ±20%, 50V
C629	24206100	EL, 10μF, ±20%, 50V
C630	24206108	EL, 0.1μF, ±20%, 50V
C631	24814472	Chip, 0.01μF, +80%, -20%
C632	24203470	EL, 47μF, ±20%, 16V
C633	24092178	Chip, 0.1μF, ±10%, 25V
C634	24206108	EL, 0.1μF, ±20%, 50V
C635	24206479	EL, 4.7μF, ±20%, 50V
C636	24206479	EL, 4.7μF, ±20%, 50V
C637	24206100	EL, 10μF, ±20%, 50V
C638	24794101	EL, 100μF, ±20%, 16V
C639	24815103	Chip, 0.01μF, ±10%
C640	24815273	Chip, 0.027μF, ±10%
C641	24815822	Chip, 0.0082μF, ±10%
C642	24206100	EL, 10μF, ±20%, 50V
C643	24206479	EL, 4.7μF, ±20%, 50V
C644	24206339	EL, 3.3μF, ±20%, 50V
C645	24815333	Chip, 0.033μF, ±10%
C646	24815223	Chip, 0.022μF, ±10%
C647	24815473	Chip, 0.047μF, ±10%
C648	24815333	Chip, 0.033μF, ±10%
C649	24815273	Chip, 0.027μF, ±10%
C650	24815822	Chip, 0.0082μF, ±10%
C651	24815103	Chip, 0.01μF, ±10%
C652	24815103	Chip, 0.01μF, ±10%
C653	24814103	Chip, 0.01μF, +80%, -20%
C654	24763101	EL, 100μF, ±20%, 16V
C661	24206010	EL, 1μF, ±20%, 50V
C662	24206010	EL, 1μF, ±20%, 50V
C663	24206010	EL, 1μF, ±20%, 50V
C664	24669479	EL, 4.7μF, ±20%, 50V
C665	24815103	Chip, 0.01μF, ±10%
C666	24206010	EL, 1μF, ±20%, 50V
C667	24747478	EL, 0.47μF, ±20%, 50V
C680	24669471	EL, 470μF, ±20%, 50V
C681	24666100	EL, 10μF, ±20%, 16V
C682	24092178	Chip, 0.1μF, ±10%, 25V
C690	24815103	Chip, 0.01μF, ±10%
C701	24781330	Chip, 33pF, SL
C702	24781330	Chip, 33pF, SL
C703	24781330	Chip, 33pF, SL
C704	24781330	Chip, 33pF, SL
C706	24092293	Chip, 0.1μF, +80%, -20%, 25V
C708	24092293	Chip, 0.1μF, +80%, -20%, 25V
C710	24092293	Chip, 0.1μF, +80%, -20%, 25V
C711	24203100	EL, 10μF, ±20%, 16V
C712	24781330	Chip, 33pF, SL
C713	24781330	Chip, 33pF, SL
C714	24092293	Chip, 0.1μF, +80%, -20%, 25V
C717	24774470	Chip, 47pF, CH
C718	24774470	Chip, 47pF, CH
C719	24794101	EL, 100μF, ±20%, 16V
C720	24092293	Chip, 0.1μF, +80%, -20%, 25V
C721	24774070	Chip, 7pF, ±0.25pF, CH
C724	24092293	Chip, 0.1μF, +80%, -20%, 25V
C725	24092293	Chip, 0.1μF, +80%, -20%, 25V
C726	24092293	Chip, 0.1μF, +80%, -20%, 25V
C727	24092293	Chip, 0.1μF, +80%, -20%, 25V
C728	24100104	Chip, 0.1μF, +80%, -20%, 25V
C730	24092293	Chip, 0.1μF, +80%, -20%, 25V
C731	24092293	Chip, 0.1μF, +80%, -20%, 25V
C732	24815103	Chip, 0.01μF, ±10%
C735	24092178	Chip, 0.1μF, ±10%, 25V
C736	24100104	Chip, 0.1μF, +80%, -20%, 25V

Location No.	Part No.	Description
C739	24092293	Chip, 0.1μF, +80%, -20%, 25V
C740	24092293	Chip, 0.1μF, +80%, -20%, 25V
C741	24794470	EL, 47μF, ±20%, 16V
C742	24794470	EL, 47μF, ±20%, 16V
C743	24092293	Chip, 0.1μF, +80%, -20%, 25V
C744	24092293	Chip, 0.1μF, +80%, -20%, 25V
C745	24794470	EL, 47μF, ±20%, 16V
C746	24794470	EL, 47μF, ±20%, 16V
C747	24092293	Chip, 0.1μF, +80%, -20%, 25V
C748	24092293	Chip, 0.1μF, +80%, -20%, 25V
C749	24794470	EL, 47μF, ±20%, 16V
C750	24794470	EL, 47μF, ±20%, 16V
C761	24774102	Chip, 1000pF, CH
C762	24590562	PF, 5600pF
C763	24774391	Chip, 390pF, CH
C765	24774102	Chip, 1000pF, CH
C766	24590562	PF, 5600pF
C767	24774391	Chip, 390pF, CH
C769	24774102	Chip, 1000pF, CH
C770	24590562	PF, 5600pF
C771	24774391	Chip, 390pF, CH
C772	24761221	EL, 220μF, ±20%, 6.3V
C773	24774102	Chip, 1000pF, CH
C774	24590562	PF, 5600pF
C775	24774391	Chip, 390pF, CH
C777	24774102	Chip, 1000pF, CH
C778	24590562	PF, 5600pF
C779	24774391	Chip, 390pF, CH
C781	24774102	Chip, 1000pF, CH
C782	24590562	PF, 5600pF
C783	24774391	Chip, 390pF, CH
C784	24774821	Chip, 820pF, CH
C785	24774821	Chip, 820pF, CH
C786	24774821	Chip, 820pF, CH
C787	24774821	Chip, 820pF, CH
C788	24774821	Chip, 820pF, CH
C789	24774821	Chip, 820pF, CH
C790	24092293	Chip, 0.1μF, +80%, -20%, 25V
C795	24761221	EL, 220μF, ±20%, 6.3V
C798	24763101	EL, 100μF, ±20%, 16V
C799	24763101	EL, 100μF, ±20%, 16V
C801	24082001	PF, 0.47μF, AC125V
C809	24086062	EL, 1000μF, ±20%, 200V
C810	24086062	EL, 1000μF, ±20%, 200V
C814	24092597	CD, 4700pF, ±20%, AC250V
C815	24092597	CD, 4700pF, ±20%, AC250V
C816	24073081	EL, 1.0μF, ±20%, 50V
C817	24092597	CD, 4700pF, ±20%, AC250V
C819	24567684	PF, 0.68μF
C830	24567334	PF, 0.33μF
C831	24073037	EL, 47μF, ±20%, 16V
C832	24567334	PF, 0.33μF
C833	24073037	EL, 47μF, ±20%, 16V
C840	24073072	EL, 1000μF, ±20%, 35V
C842	24073001	EL, 100μF, ±20%, 6.3V
C843	24567104	PF, 0.1μF
C857	24073060	EL, 4700μF, ±20%, 25V
C858	24073060	EL, 4700μF, ±20%, 25V
C860	24214103	CD, 0.01μF, ±10%, 500V
C863	24567104	PF, 0.1μF
C864	24092474	CD, 220pF, ±10%, 2kV
C866	24567474	PF, 0.47μF
C867	24591682	PF, 6800pF
C868	24073052	EL, 47μF, ±20%, 25V

Location No.	Part No.	Description
C869	24678229	EL, 2.2μF, ±20%, 200V
C870	24082890	PF, 0.082μF, 800V
C871	24092484	CD, 1500pF, ±10%, 2kV
C872	24092474	CD, 220pF, ±10%, 2kV
C873	24567224	PF, 0.22μF
C874	24212471	CD, 470pF, ±10%
C876	24567474	PF, 0.47μF
C879	24073081	EL, 1.0μF, ±20%, 50V
C884	24086939	EL, 330μF, ±20%, 200V
C890	24073096	EL, 3300μF, ±20%, 50V
C891	24082229	PF, 0.1μF, ±10%, 250V
C894	24073043	EL, 2200μF, ±20%, 16V
C895	24073043	EL, 2200μF, ±20%, 16V
C898	24212102	CD, 1000pF, ±10%
C901	24211102	CD, 1000pF, ±10%, 2kV
C902	24794100	EL, 10μF, ±20%, 16V
C903	24232103	CD, 0.01μF, +80%, -20%
C904	24436102	CD, 1000pF
C908	24214472	CD, 4700pF, ±10%, 500V
C909	24436221	CD, 220pF
C911	24211102	CD, 1000pF, ±10%, 2kV
C912	24794100	EL, 10μF, ±20%, 16V
C914	24436102	CD, 1000pF
C915	24679330	EL, 33μF, ±20%, 250V
C916	24794101	EL, 100μF, ±20%, 16V
C918	24794470	EL, 47μF, ±20%, 16V
C919	24436221	CD, 220pF
C921	24211102	CD, 1000pF, ±10%, 2kV
C922	24794100	EL, 10μF, ±20%, 16V
C923	24794470	EL, 47μF, ±20%, 16V
C924	24232103	CD, 0.01μF, +80%, -20%
C925	24794470	EL, 47μF, ±20%, 16V
C926	24436102	CD, 1000pF
C927	24436221	CD, 220pF
C928	24214472	CD, 4700pF, ±10%, 500V
C929	24794100	EL, 10μF, ±20%, 16V
C961	24666101	EL, 100μF, ±20%, 16V
C962	24203100	EL, 10μF, ±20%, 16V
C963	24232103	CD, 0.01μF, +80%, -20%
C964	24567104	PF, 0.1μF
C7721	24815102	Chip, 0.001μF, ±10%
C7722	24781101	Chip, 100pF, SL
C7724	24667101	EL, 100μF, ±20%, 25V
C7725	24667101	EL, 100μF, ±20%, 25V
C7726	24815102	Chip, 0.001μF, ±10%
C7727	24781101	Chip, 100pF, SL
C7729	24815102	Chip, 0.001μF, ±10%
C7730	24781101	Chip, 100pF, SL
C7732	24815102	Chip, 0.001μF, ±10%
C7733	24781101	Chip, 100pF, SL
C7735	24667101	EL, 100μF, ±20%, 25V
C7736	24667101	EL, 100μF, ±20%, 25V
C7737	24815102	Chip, 0.001μF, ±10%
C7738	24781101	Chip, 100pF, SL
C7740	24815102	Chip, 0.001μF, ±10%
C7741	24781101	Chip, 100pF, SL
C7744	24815103	Chip, 0.01μF, ±10%
C7747	24667101	EL, 100μF, ±20%, 25V
C7748	24567104	PF, 0.1μF
C7749	24567104	PF, 0.1μF
C7750	24667101	EL, 100μF, ±20%, 25V
C7751	24667101	EL, 100μF, ±20%, 25V
C7752	24567104	PF, 0.1μF
C7753	24567104	PF, 0.1μF
C7754	24667101	EL, 100μF, ±20%, 25V

Location No.	Part No.	Description
C7755	24667101	EL, 100μF, ±20%, 25V
C7765	24669479	EL, 4.7μF, ±20%, 50V
C7766	24669479	EL, 4.7μF, ±20%, 50V
C7767	24667470	EL, 47μF, ±20%, 25V
C7769	24815103	Chip, 0.01μF, ±10%
C7774	24781101	Chip, 100pF, SL
C7776	24667470	EL, 47μF, ±20%, 25V
CA10	24781101	Chip, 100pF, SL
CA13	24815221	Chip, 220pF, ±10%
CA18	24666470	EL, 47μF, ±20%, 16V
CA20	24774181	Chip, 180pF, CH
CA21	24092442	Chip, 0.47μF, +80%, -20%, 16V
CA22	24815103	Chip, 0.01μF, ±10%
CA23	24774181	Chip, 180pF, CH
CA24	24092442	Chip, 0.47μF, +80%, -20%, 16V
CA25	24666100	EL, 10μF, ±20%, 16V
CA26	24092441	Chip, 1μF, +80%, -20%, 16V
CA27	24092441	Chip, 1μF, +80%, -20%, 16V
CA29	24815221	Chip, 220pF, ±10%
CA30	24774101	Chip, 100pF, CH
CA34	24781101	Chip, 100pF, SL
CA45	24666100	EL, 10μF, ±20%, 16V
CA49	24666100	EL, 10μF, ±20%, 16V
CA50	24814103	Chip, 0.01μF, +80%, -20%
CA52	24815272	Chip, 0.0027μF, ±10%
CA54	24781101	Chip, 100pF, SL
CA59	24781101	Chip, 100pF, SL
CA60	24781101	Chip, 100pF, SL
CA61	24666220	EL, 22μF, ±20%, 16V
CA64	24814103	Chip, 0.01μF, +80%, -20%
CA68	24666100	EL, 10μF, ±20%, 16V
CA69	24814103	Chip, 0.01μF, +80%, -20%
CA71	24781101	Chip, 100pF, SL
CA72	24085981	EL, 10μF, ±20%, 16V, Non-Polar
CA73	24666100	EL, 10μF, ±20%, 16V
CB11	24794470	EL, 47μF, ±20%, 16V
CB13	24085981	EL, 10μF, ±20%, 16V, Non-Polar
CB14	24781101	Chip, 100pF, SL
CB15	24794100	EL, 10μF, ±20%, 16V
CB42	24232103	CD, 0.01μF, +80%, -20%
CB61	24781221	Chip, 220pF, SL
CB90	24815103	Chip, 0.01μF, ±10%
CB91	24666100	EL, 10μF, ±20%, 16V
CD02	24591562	PF, 5600pF
CD03	24591393	PF, 0.039μF
CD04	24591393	PF, 0.039μF
CD08	24794100	EL, 10μF, ±20%, 16V
CD10	24436101	CD, 100pF
CD12	24436101	CD, 100pF
CD13	24797479	EL, 4.7μF, ±20%, 50V
CD14	24797229	EL, 2.2μF, ±20%, 50V
CD15	24794470	EL, 47μF, ±20%, 16V
CD16	24797229	EL, 2.2μF, ±20%, 50V
CR12	24092178	Chip, 0.1μF, ±10%, 25V
CR13	24092178	Chip, 0.1μF, ±10%, 25V
CR14	24092178	Chip, 0.1μF, ±10%, 25V
CR15	24092178	Chip, 0.1μF, ±10%, 25V
CR16	24092178	Chip, 0.1μF, ±10%, 25V
CR17	24092178	Chip, 0.1μF, ±10%, 25V
CS03	24436221	CD, 220pF

Location No.	Part No.	Description
CS04	24206010	EL, 1μF, ±20%, 50V
CS07	24436221	CD, 220pF
CS08	24206010	EL, 1μF, ±20%, 50V
CS09	24436331	CD, 330pF
CS10	24206229	EL, 2.2μF, ±20%, 50V
CS11	24206010	EL, 1μF, ±20%, 50V
CS12	24436221	CD, 220pF
CS13	24206010	EL, 1μF, ±20%, 50V
CS14	24436221	CD, 220pF
CS15	24436331	CD, 330pF
CS16	24206229	EL, 2.2μF, ±20%, 50V
CS21	24436101	CD, 100pF
CS22	24436101	CD, 100pF
CS23	24206478	EL, 0.47μF, ±20%, 50V
CS24	24436331	CD, 330pF
CS25	24206229	EL, 2.2μF, ±20%, 50V
CS28	24436331	CD, 330pF
CS29	24436331	CD, 330pF
CS32	24203100	EL, 10μF, ±20%, 16V
CS33	24203100	EL, 10μF, ±20%, 16V
CS34	24436331	CD, 330pF
CS35	24206229	EL, 2.2μF, ±20%, 50V
CS36	24206229	EL, 2.2μF, ±20%, 50V
CS38	24206229	EL, 2.2μF, ±20%, 50V
CS41	24436331	CD, 330pF
CS42	24206229	EL, 2.2μF, ±20%, 50V
CS43	24436331	CD, 330pF
CS44	24206229	EL, 2.2μF, ±20%, 50V
CV01	24085981	EL, 10μF, ±20%, 16V, Non-Polar
CV02	24232103	CD, 0.01μF, +80%, -20%
CV03	24203100	EL, 10μF, ±20%, 16V
CV04	24203100	EL, 10μF, ±20%, 16V
CV05	24203100	EL, 10μF, ±20%, 16V
CV08	24666471	EL, 470μF, ±20%, 16V
CV09	24666471	EL, 470μF, ±20%, 16V
CV13	24794100	EL, 10μF, ±20%, 16V
CV14	24232103	CD, 0.01μF, +80%, -20%
CV15	24232103	CD, 0.01μF, +80%, -20%
CV16	24085981	EL, 10μF, ±20%, 16V, Non-Polar
CV17	24203100	EL, 10μF, ±20%, 16V
CV19	24232103	CD, 0.01μF, +80%, -20%
CV21	24203100	EL, 10μF, ±20%, 16V
CV22	24203100	EL, 10μF, ±20%, 16V
CV23	24232103	CD, 0.01μF, +80%, -20%
CV24	24232103	CD, 0.01μF, +80%, -20%
CV27	24202221	EL, 220μF, ±20%, 10V
CV28	24202221	EL, 220μF, ±20%, 10V
CV29	24203101	EL, 100μF, ±20%, 16V
CV30	24232103	CD, 0.01μF, +80%, -20%
CV31	24203100	EL, 10μF, ±20%, 16V
CV38	24203101	EL, 100μF, ±20%, 16V
CV39	24212102	CD, 1000pF, ±10%
CV40	24763101	EL, 100μF, ±20%, 16V
CV41	24232103	CD, 0.01μF, +80%, -20%
CV42	24085971	EL, 3.3μF, ±20%, 50V, Non-Polar
CV43	24436121	CD, 120pF
CV44	24436220	CD, 22pF
CV46	24232103	CD, 0.01μF, +80%, -20%
CV48	24763101	EL, 100μF, ±20%, 16V
CV49	24232103	CD, 0.01μF, +80%, -20%
CV61	24232103	CD, 0.01μF, +80%, -20%

Location No.	Part No.	Description
CV64	24206100	EL, 10μF, ±20%, 50V
CV65	24591122	PF, 1200pF
CV66	24436561	CD, 560pF
CV67	24591102	PF, 1000pF
CV68	24206010	EL, 1μF, ±20%, 50V
CW04	24591822	PF, 8200pF
CW05	24212103	CD, 0.01μF, ±10%
CW07	24666470	EL, 47μF, ±20%, 16V
CW08	24794101	EL, 100μF, ±20%, 16V
CW09	24815103	Chip, 0.01μF, ±10%
CW12	24666470	EL, 47μF, ±20%, 16V
CW13	24709100	EL, 10μF, ±20%, 200V
CW14	24436101	CD, 100pF
CW15	24214472	CD, 4700pF, ±10%, 500V
CW16	24436101	CD, 100pF
CW17	24214472	CD, 4700pF, ±10%, 500V
CW18	24666470	EL, 47μF, ±20%, 16V
CW19	24435560	CD, 56pF, 500V
CW20	24709100	EL, 10μF, ±20%, 200V
CW21	24666470	EL, 47μF, ±20%, 16V
CW22	24436561	CD, 560pF
CW26	24212102	CD, 1000pF, ±10%
CW52	24203100	EL, 10μF, ±20%, 16V
CW53	24203100	EL, 10μF, ±20%, 16V
CW54	24203100	EL, 10μF, ±20%, 16V
CW58	24794101	EL, 100μF, ±20%, 16V
CW59	24232103	CD, 0.01μF, +80%, -20%
CY01	24665471	EL, 470μF, ±20%, 10V
CY40	24206100	EL, 10μF, ±20%, 50V
CZ03	24092442	Chip, 0.47μF, +80%, -20%, 16V
CZ05	24814103	Chip, 0.01μF, +80%, -20%
CZ07	24092178	Chip, 0.1μF, ±10%, 25V
CZ09	24781220	Chip, 22pF, SL
CZ10	24781100	Chip, 10pF, ±0.5pF%, SL
CZ11	24781220	Chip, 22pF, SL
CZ12	24814103	Chip, 0.01μF, +80%, -20%
CZ13	24814103	Chip, 0.01μF, +80%, -20%
CZ14	24203100	EL, 10μF, ±20%, 16V
CZ17	24814103	Chip, 0.01μF, +80%, -20%
CZ19	24781181	Chip, 180pF, SL
CZ20	24814103	Chip, 0.01μF, +80%, -20%
CZ21	24781122	Chip, 1200pF, SL
CZ22	24203100	EL, 10μF, ±20%, 16V
CZ23	24814103	Chip, 0.01μF, +80%, -20%
CZ24	24814103	Chip, 0.01μF, +80%, -20%
CZ25	24203100	EL, 10μF, ±20%, 16V
CZ26	24814103	Chip, 0.01μF, +80%, -20%
CZ28	24814103	Chip, 0.01μF, +80%, -20%
CZ29	24814103	Chip, 0.01μF, +80%, -20%
CZ30	24203100	EL, 10μF, ±20%, 16V
CZ31	24092178	Chip, 0.1μF, ±10%, 25V
CZ32	24781150	Chip, 15pF, SL
CZ33	24781390	Chip, 39pF, SL
CZ34	24781150	Chip, 15pF, SL
CZ35	24781390	Chip, 39pF, SL
CZ37	24203100	EL, 10μF, ±20%, 16V
CZ38	24203100	EL, 10μF, ±20%, 16V
CZ41	24781470	Chip, 47pF, SL
CZ42	24781470	Chip, 47pF, SL
CZ45	24781100	Chip, 10pF, ±0.5pF%, SL

RESISTORS

Location No.	Part No.	Description
R101	24383223	OMF, 22k ohm, 2W
R150	24872101	Chip, 100 ohm, 1/16W (50A60/55A60/61A60)
R151	24872562	Chip, 5600 ohm, 1/16W (50A60/55A60/61A60)
R152	24872103	Chip, 10k ohm, 1/16W (50A60/55A60/61A60)
R201	24872821	Chip, 820 ohm, 1/16W
R202	24872102	Chip, 1k ohm, 1/16W
R204	24872104	Chip, 100k ohm, 1/16W
R205	24872101	Chip, 100 ohm, 1/16W (50A60/55A60/61A60)
R206	24872102	Chip, 1k ohm, 1/16W (50A60/55A60/61A60)
R207	24872101	Chip, 100 ohm, 1/16W
R208	24872101	Chip, 100 ohm, 1/16W
R209	24872101	Chip, 100 ohm, 1/16W
R212	24872472	Chip, 4700 ohm, 1/16W
R213	24872122	Chip, 1200 ohm, 1/16W
R214	24872222	Chip, 2200 ohm, 1/16W
R216	24872103	Chip, 10k ohm, 1/16W
R223	24872102	Chip, 1k ohm, 1/16W
R241	24367103	CF, 10k ohm, ±2%
R242	24367103	CF, 10k ohm, ±2%
R243	24381563	OMF, 56k ohm, 1/2W
R266	24872102	Chip, 1k ohm, 1/16W
R267	24872821	Chip, 820 ohm, 1/16W
R268	24872102	Chip, 1k ohm, 1/16W
R269	24872102	Chip, 1k ohm, 1/16W
R270	24872682	Chip, 6800 ohm, 1/16W
R301	24872103	Chip, 10k ohm, 1/16W
R302	24872101	Chip, 100 ohm, 1/16W
R303	24872102	Chip, 1k ohm, 1/16W
R304	24872103	Chip, 10k ohm, 1/16W
R305	24872153	Chip, 15k ohm, 1/16W
R307	24872471	Chip, 470 ohm, 1/16W
R308	24872471	Chip, 470 ohm, 1/16W
R310	24872562	Chip, 5600 ohm, 1/16W
R311	24872103	Chip, 10k ohm, 1/16W
R312	24872103	Chip, 10k ohm, 1/16W
R313	24872102	Chip, 1k ohm, 1/16W
R314	24872473	Chip, 47k ohm, 1/16W
R315	24872821	Chip, 820 ohm, 1/16W
R316	24872102	Chip, 1k ohm, 1/16W
R317	24872824	Chip, 820k ohm, 1/16W
R318	24872153	Chip, 15k ohm, 1/16W
R319	24872100	Chip, 10 ohm, 1/16W
R320	24000249	MF, 47k ohm, 1/4W
R321	24872332	Chip, 3300 ohm, 1/16W
R322	24000529	MF, 6800 ohm, 1/4W
R323	24000639	MF, 22k ohm, 1/4W
R324	24872103	Chip, 10k ohm, 1/16W
R325	24872222	Chip, 2200 ohm, 1/16W
R326	24872103	Chip, 10k ohm, 1/16W
R327	24872103	Chip, 10k ohm, 1/16W
R328	24872103	Chip, 10k ohm, 1/16W
R329	24872103	Chip, 10k ohm, 1/16W
R330	24872153	Chip, 15k ohm, 1/16W
R331	24019119	MF, 30k ohm, 1/6W
R332	24000525	MF, 4.7k ohm, 1/4W
R333	24872103	Chip, 10k ohm, 1/16W
R334	24872102	Chip, 1k ohm, 1/16W
R335	24872102	Chip, 1k ohm, 1/16W
R336	24872102	Chip, 1k ohm, 1/16W
R337	24321129	MF, 1.2 ohm, 1/2W

Location No.	Part No.	Description
R338	24872682	Chip, 6800 ohm, 1/16W (50A60/55A60/61A60)
R339	24872393	Chip, 39k ohm, 1/16W (50A60/55A60/61A60)
R340	24872824	Chip, 820k ohm, 1/16W (50A60/55A60/61A60)
R341	24872273	Chip, 27k ohm, 1/16W (50A60/55A60/61A60)
R342	24872153	Chip, 15k ohm, 1/16W
R343	24872102	Chip, 1k ohm, 1/16W (50A60/55A60/61A60)
R344	24382271	OMF, 270 ohm, 1W
R345	24322828	MF, 0.82 ohm, 1W
R346	24382391	OMF, 390 ohm, 1W
R347	24872103	Chip, 10k ohm, 1/16W (50A60/55A60/61A60)
R348	24872103	Chip, 10k ohm, 1/16W (50A60/55A60/61A60)
R349	24872392	Chip, 3900 ohm, 1/16W (50A60/55A60/61A60)
R350	24872822	Chip, 8200 ohm, 1/16W (50A60/55A60/61A60)
R351	24366472	CF, 4700 ohm (50A60/55A60/61A60)
R360	24872103	Chip, 10k ohm, 1/16W
R361	24872103	Chip, 10k ohm, 1/16W
R362	24872103	Chip, 10k ohm, 1/16W
R363	24872682	Chip, 6800 ohm, 1/16W
R364	24872103	Chip, 10k ohm, 1/16W
R370	24872102	Chip, 1k ohm, 1/16W
R371	24872823	Chip, 82k ohm, 1/16W
R372	24872332	Chip, 3300 ohm, 1/16W
R373	24872823	Chip, 82k ohm, 1/16W
R374	24872104	Chip, 100k ohm, 1/16W
R375	24872153	Chip, 15k ohm, 1/16W
R376	24872333	Chip, 33k ohm, 1/16W
R378	24872222	Chip, 2200 ohm, 1/16W
R401	24366102	CF, 1k ohm
R401	24872391	Chip, 390 ohm, 1/16W
R402	24366102	CF, 1k ohm
R403	24553272	OMF, 2700 ohm, 1W
R403	24872302	Chip, 3k ohm, 1/16W
R404	24384682	OMF, 6800 ohm, 3W
R405	24552330	OMF, 33 ohm, 1/2W
R406	24382222	OMF, 2200 ohm, 1W
R406	24872223	Chip, 22k ohm, 1/16W
R407	24552100	OMF, 10 ohm, 1/2W
R407	24872103	Chip, 10k ohm, 1/16W
R408	24366101	CF, 100 ohm
R409	24555220	OMF, 22 ohm, 3W
R410	24555220	OMF, 22 ohm, 3W
R411	24383270	OMF, 27 ohm, 2W
R412	24366223	CF, 22k ohm
R413	24366332	CF, 3300 ohm
R414	24366100	CF, 10 ohm
R415	24533102	FR, 1k ohm, 2W
R418	24019292	FR, 68 ohm, 1/2W
R419	24942102	CC, 1k ohm, 1/2W
R420	24382473	OMF, 47k ohm, 1W
R421	24382104	OMF, 100k ohm, 1W (50A60/55A60/61A60)
R423	24872471	Chip, 470 ohm, 1/16W
R424	24338398	MF, 0.39 ohm, 1W
R426	24000112	FR, 10 ohm, 1/4W

Location No.	Part No.	Description
R428	24310109	MF, 1.0 ohm, 1/2W
R431	24383102	OMF, 1k ohm, 2W (50A60/55A60/61A60)
R432	24376274	CF, 270k ohm, 1/2W (50A60/55A60/61A60)
R432	24552101	OMF, 100 ohm, 1/2W
R433	24376274	CF, 270k ohm, 1/2W (50A60/55A60/61A60)
R433	24872222	Chip, 2200 ohm, 1/16W
R434	24376274	CF, 270k ohm, 1/2W (50A60/55A60/61A60)
R435	24322228	MF, 0.22 ohm, 1W
R436	24382561	OMF, 560 ohm, 1W
R437	24382561	OMF, 560 ohm, 1W
R438	24382561	OMF, 560 ohm, 1W
R439	24366103	CF, 10k ohm
R440	24366103	CF, 10k ohm
R441	24366474	CF, 470k ohm
R442	24366103	CF, 10k ohm
R443	24366562	CF, 5600 ohm
R444	24366103	CF, 10k ohm
R445	24366472	CF, 4700 ohm
R446	24366103	CF, 10k ohm
R447	24366681	CF, 680 ohm
R448	24366334	CF, 330k ohm
R449	24366101	CF, 100 ohm
R451	24872224	Chip, 220k ohm, 1/16W
R468	24366103	CF, 10k ohm
R469	24366222	CF, 2200 ohm
R470	24338828	MF, 0.82 ohm, 1W
R471	24552271	OMF, 270 ohm, 1/2W
R472	24552151	OMF, 150 ohm, 1/2W
R473	24327223	MF, 22k ohm, ±1%, 1/4W
R474	24327223	MF, 22k ohm, ±1%, 1/4W
R475	24366102	CF, 1k ohm
R479	24366393	CF, 39k ohm
R480	24366103	CF, 10k ohm
R481	24366102	CF, 1k ohm
R482	24366331	CF, 330 ohm
R483	24366102	CF, 1k ohm
R484	24366474	CF, 470k ohm
R485	24366103	CF, 10k ohm
R486	24366103	CF, 10k ohm
⚠ R487	24000366	MF, 2200 ohm, 1/4W
⚠ R488	24000357	MF, 910ohm, 1/4W
R489	24366222	CF, 2200 ohm
R490	24000639	MF, 22k ohm, 1/4W
R492	24366392	CF, 3900 ohm
R493	24366224	CF, 220k ohm
⚠ R494	24000635	MF, 12k ohm, ±1%, 1/4W
R495	24366473	CF, 47k ohm
R496	24366223	CF, 22k ohm
R497	24366103	CF, 10k ohm
R498	24366223	CF, 22k ohm
R499	24366683	CF, 68k ohm
R501	24872223	Chip, 22k ohm, 1/16W
R502	24872101	Chip, 100 ohm, 1/16W
R503	24872101	Chip, 100 ohm, 1/16W
R504	24872101	Chip, 100 ohm, 1/16W
R505	24872471	Chip, 470 ohm, 1/16W
R506	24872103	Chip, 10k ohm, 1/16W
R508	24872102	Chip, 1k ohm, 1/16W
R509	24872471	Chip, 470 ohm, 1/16W
R510	24872102	Chip, 1k ohm, 1/16W

Location No.	Part No.	Description
R512	24872101	Chip, 100 ohm, 1/16W
R514	24872122	Chip, 1200 ohm, 1/16W
R515	24872103	Chip, 10k ohm, 1/16W
R530	24872101	Chip, 100 ohm, 1/16W
R531	24872101	Chip, 100 ohm, 1/16W
R532	24872101	Chip, 100 ohm, 1/16W
R533	24872102	Chip, 1k ohm, 1/16W
R534	24872102	Chip, 1k ohm, 1/16W
R535	24872102	Chip, 1k ohm, 1/16W
R536	24872272	Chip, 2700 ohm, 1/16W
R537	24872472	Chip, 4700 ohm, 1/16W
R538	24872103	Chip, 10k ohm, 1/16W
R601	24872682	Chip, 6800 ohm, 1/16W
R602	24872682	Chip, 6800 ohm, 1/16W
R603	24872562	Chip, 5600 ohm, 1/16W
R604	24872562	Chip, 5600 ohm, 1/16W
R609	24872229	Chip, 2.2 ohm, 1/16W
R610	24872229	Chip, 2.2 ohm, 1/16W
R611	24872332	Chip, 3300 ohm, 1/16W
R612	24872332	Chip, 3300 ohm, 1/16W
R613	24872222	Chip, 2200 ohm, 1/16W
R621	24872101	Chip, 100 ohm, 1/16W
R622	24872105	Chip, 1M ohm, 1/16W
R623	24872101	Chip, 100 ohm, 1/16W
R624	24872101	Chip, 100 ohm, 1/16W
R625	24872101	Chip, 100 ohm, 1/16W
R626	24872101	Chip, 100 ohm, 1/16W
R627	24872101	Chip, 100 ohm, 1/16W
R633	24872101	Chip, 100 ohm, 1/16W
R634	24872101	Chip, 100 ohm, 1/16W
R635	24872101	Chip, 100 ohm, 1/16W
R636	24872101	Chip, 100 ohm, 1/16W
R637	24872101	Chip, 100 ohm, 1/16W
R638	24872101	Chip, 100 ohm, 1/16W
R639	24872101	Chip, 100 ohm, 1/16W
R640	24872101	Chip, 100 ohm, 1/16W
R641	24872101	Chip, 100 ohm, 1/16W
R642	24872101	Chip, 100 ohm, 1/16W
R643	24872101	Chip, 100 ohm, 1/16W
R661	24872101	Chip, 100 ohm, 1/16W
R662	24872153	Chip, 15k ohm, 1/16W
R663	24872123	Chip, 12k ohm, 1/16W
R665	24872223	Chip, 22k ohm, 1/16W
R666	24872473	Chip, 47k ohm, 1/16W
R667	24872223	Chip, 22k ohm, 1/16W
R668	24872473	Chip, 47k ohm, 1/16W
R669	24872222	Chip, 2200 ohm, 1/16W
R671	24872101	Chip, 100 ohm, 1/16W
R672	24872153	Chip, 15k ohm, 1/16W
R673	24872123	Chip, 12k ohm, 1/16W
R674	24872103	Chip, 10k ohm, 1/16W
R675	24872473	Chip, 47k ohm, 1/16W
R682	24872473	Chip, 47k ohm, 1/16W
R683	24872223	Chip, 22k ohm, 1/16W
R684	24872223	Chip, 22k ohm, 1/16W
R687	24872103	Chip, 10k ohm, 1/16W
R689	24872222	Chip, 2200 ohm, 1/16W
R690	24872103	Chip, 10k ohm, 1/16W
R701	24872221	Chip, 220 ohm, 1/16W
R702	24872221	Chip, 220 ohm, 1/16W
R703	24872472	Chip, 4700 ohm, 1/16W
R704	24872472	Chip, 4700 ohm, 1/16W
R707	24872100	Chip, 10 ohm, 1/16W
R708	24872100	Chip, 10 ohm, 1/16W

Location No.	Part No.	Description
R709	24872100	Chip, 10 ohm, 1/16W
R710	24872100	Chip, 10 ohm, 1/16W
R711	24872100	Chip, 10 ohm, 1/16W
R712	24872100	Chip, 10 ohm, 1/16W
R713	24872100	Chip, 10 ohm, 1/16W
R714	24872100	Chip, 10 ohm, 1/16W
R716	24872103	Chip, 10k ohm, 1/16W
R718	24872221	Chip, 220 ohm, 1/16W
R719	24872103	Chip, 10k ohm, 1/16W
R720	24872103	Chip, 10k ohm, 1/16W
R721	24872103	Chip, 10k ohm, 1/16W
R722	24872561	Chip, 560 ohm, 1/16W
R723	24872102	Chip, 1k ohm, 1/16W
R724	24872102	Chip, 1k ohm, 1/16W
R725	24872102	Chip, 1k ohm, 1/16W
R727	24872222	Chip, 2200 ohm, 1/16W
R728	24872221	Chip, 220 ohm, 1/16W
R729	24872221	Chip, 220 ohm, 1/16W
R730	24872473	Chip, 47k ohm, 1/16W
R731	24872473	Chip, 47k ohm, 1/16W
R732	24872473	Chip, 47k ohm, 1/16W
R733	24872473	Chip, 47k ohm, 1/16W
R734	24872221	Chip, 220 ohm, 1/16W
R735	24872911	Chip, 910 ohm, 1/16W
R736	24872911	Chip, 910 ohm, 1/16W
R737	24872152	Chip, 1500 ohm, 1/16W
R738	24872332	Chip, 3300 ohm, 1/16W
R739	24872362	Chip, 3600 ohm, 1/16W
R740	24872911	Chip, 910 ohm, 1/16W
R741	24872911	Chip, 910 ohm, 1/16W
R742	24872152	Chip, 1500 ohm, 1/16W
R743	24872332	Chip, 3300 ohm, 1/16W
R744	24872362	Chip, 3600 ohm, 1/16W
R745	24872911	Chip, 910 ohm, 1/16W
R746	24872911	Chip, 910 ohm, 1/16W
R747	24872152	Chip, 1500 ohm, 1/16W
R748	24872332	Chip, 3300 ohm, 1/16W
R749	24872362	Chip, 3600 ohm, 1/16W
R750	24872911	Chip, 910 ohm, 1/16W
R751	24872911	Chip, 910 ohm, 1/16W
R752	24872152	Chip, 1500 ohm, 1/16W
R753	24872332	Chip, 3300 ohm, 1/16W
R754	24872362	Chip, 3600 ohm, 1/16W
R755	24872911	Chip, 910 ohm, 1/16W
R756	24872911	Chip, 910 ohm, 1/16W
R757	24872152	Chip, 1500 ohm, 1/16W
R758	24872332	Chip, 3300 ohm, 1/16W
R759	24872362	Chip, 3600 ohm, 1/16W
R760	24872911	Chip, 910 ohm, 1/16W
R761	24872911	Chip, 910 ohm, 1/16W
R762	24872152	Chip, 1500 ohm, 1/16W
R763	24872332	Chip, 3300 ohm, 1/16W
R764	24872362	Chip, 3600 ohm, 1/16W
R778	24872101	Chip, 100 ohm, 1/16W
R779	24872101	Chip, 100 ohm, 1/16W
R780	24872101	Chip, 100 ohm, 1/16W
R781	24872101	Chip, 100 ohm, 1/16W
R782	24872101	Chip, 100 ohm, 1/16W
R783	24872101	Chip, 100 ohm, 1/16W
R786	24872472	Chip, 4700 ohm, 1/16W
R787	24872472	Chip, 4700 ohm, 1/16W
R815	24366102	CF, 1k ohm
R816	24366102	CF, 1k ohm
R817	24366102	CF, 1k ohm

Location No.	Part No.	Description
R818	24366471	CF, 470 ohm
R819	24366102	CF, 1k ohm
R820	24327153	MF, 15k ohm, ±1%, 1/4W
R821	24327123	MF, 12k ohm, ±1%, 1/4W
R822	24327123	MF, 12k ohm, ±1%, 1/4W
R823	24327123	MF, 12k ohm, ±1%, 1/4W
R824	24366102	CF, 1k ohm
R842	24366222	CF, 2200 ohm
R843	24366103	CF, 10k ohm
R861	24383473	OMF, 47k ohm, 2W
R862	24381330	OMF, 33 ohm, 1/2W
R864	24552102	OMF, 1k ohm, 1/2W
R865	24552470	OMF, 47 ohm, 1/2W
R867	24366563	CF, 56k ohm
R868	24552560	OMF, 56 ohm, 1/2W
R870	24381121	OMF, 120 ohm, 1/2W
R871	24382680	OMF, 68 ohm, 1W
R872	24377224	CF, 220k ohm, 1W
R883	24381683	OMF, 68k ohm, 1/2W
R884	24366102	CF, 1k ohm
R891	24366152	CF, 1500 ohm
R898	24002000	CC, 3.9M ohm, ±10%, 1/2W
R900	24000906	FR, 2.4 ohm, 2W
R901	24366101	CF, 100 ohm
R903	24942102	CC, 1k ohm, 1/2W
R904	24366102	CF, 1k ohm
R905	24366470	CF, 47 ohm
R906	24366471	CF, 470 ohm
R908	24366330	CF, 33 ohm
R909	24366101	CF, 100 ohm
R911	24366101	CF, 100 ohm
R913	24942102	CC, 1k ohm, 1/2W
R914	24366102	CF, 1k ohm
R915	24366750	CF, 75 ohm
R916	24366471	CF, 470 ohm
R918	24366330	CF, 33 ohm
R919	24366391	CF, 390 ohm
R921	24366101	CF, 100 ohm
R923	24942102	CC, 1k ohm, 1/2W
R924	24366102	CF, 1k ohm
R925	24366101	CF, 100 ohm
R926	24366471	CF, 470 ohm
R927	24366102	CF, 1k ohm
R928	24366330	CF, 33 ohm
R931	24555153	OMF, 15k ohm, 3W
R932	24555153	OMF, 15k ohm, 3W
R940	24366102	CF, 1k ohm
R941	24555153	OMF, 15k ohm, 3W
R942	24555153	OMF, 15k ohm, 3W
R949	24366470	CF, 47 ohm
R950	24366101	CF, 100 ohm
R951	24555153	OMF, 15k ohm, 3W
R952	24555153	OMF, 15k ohm, 3W
R953	24366470	CF, 47 ohm
R954	24366102	CF, 1k ohm
R955	24366151	CF, 150 ohm
R956	24366271	CF, 270 ohm
R958	24366821	CF, 820 ohm
R959	24366390	CF, 39 ohm
R960	24366560	CF, 56 ohm
R961	24366821	CF, 820 ohm
R962	24366391	CF, 390 ohm
R963	24366222	CF, 2200 ohm
R964	24366332	CF, 3300 ohm

Location No.	Part No.	Description
R965	24366471	CF, 470 ohm
R966	24366821	CF, 820 ohm
R967	24366122	CF, 1200 ohm
R968	24366680	CF, 68 ohm
R969	24366103	CF, 10k ohm
R970	24366222	CF, 2200 ohm
R971	24367152	CF, 1500 ohm, ±2%
R972	24367471	CF, 470 ohm, ±2%
R973	24367681	CF, 680 ohm, ±2%
R974	24367681	CF, 680 ohm, ±2%
R975	24366242	CF, 2400 ohm
R976	24367562	CF, 5600 ohm, ±2%
R977	24367562	CF, 5600 ohm, ±2%
R978	24367681	CF, 680 ohm, ±2%
R980	24366272	CF, 2700 ohm
R981	24366103	CF, 10k ohm
R982	24366562	CF, 5600 ohm
R983	24366562	CF, 5600 ohm
R984	24366562	CF, 5600 ohm
R986	24366102	CF, 1k ohm
R987	24366822	CF, 8200 ohm
R988	24366103	CF, 10k ohm
R989	24366103	CF, 10k ohm
R990	24366392	CF, 3900 ohm
R991	24366562	CF, 5600 ohm
R992	24366102	CF, 1k ohm
R993	24366681	CF, 680 ohm
R994	24366392	CF, 3900 ohm
R995	24366102	CF, 1k ohm
R996	24366103	CF, 10k ohm
R997	24366472	CF, 4700 ohm
R998	24366102	CF, 1k ohm
R999	24366102	CF, 1k ohm
R7707	24872472	Chip, 4700 ohm, 1/16W
R7708	24872472	Chip, 4700 ohm, 1/16W
R7710	24555680	OMF, 68 ohm, 3W
R7711	24323229	MF, 2.2 ohm, 2W
R7712	24872472	Chip, 4700 ohm, 1/16W
R7713	24872472	Chip, 4700 ohm, 1/16W
R7715	24555680	OMF, 68 ohm, 3W
R7716	24323229	MF, 2.2 ohm, 2W
R7717	24872472	Chip, 4700 ohm, 1/16W
R7718	24872472	Chip, 4700 ohm, 1/16W
R7720	24555680	OMF, 68 ohm, 3W
R7721	24323229	MF, 2.2 ohm, 2W
R7722	24872472	Chip, 4700 ohm, 1/16W
R7723	24872472	Chip, 4700 ohm, 1/16W
R7725	24555680	OMF, 68 ohm, 3W
R7726	24323229	MF, 2.2 ohm, 2W
R7727	24872472	Chip, 4700 ohm, 1/16W
R7728	24872472	Chip, 4700 ohm, 1/16W
R7730	24555680	OMF, 68 ohm, 3W
R7731	24323229	MF, 2.2 ohm, 2W
R7732	24872472	Chip, 4700 ohm, 1/16W
R7733	24872472	Chip, 4700 ohm, 1/16W
R7735	24555680	OMF, 68 ohm, 3W
R7736	24323229	MF, 2.2 ohm, 2W
R7766	24872223	Chip, 22k ohm, 1/16W
R7767	24872153	Chip, 15k ohm, 1/16W
R7773	24872224	Chip, 220k ohm, 1/16W
R7775	24872273	Chip, 27k ohm, 1/16W
R7776	24872472	Chip, 4700 ohm, 1/16W
R7777	24872273	Chip, 27k ohm, 1/16W
R7778	24872472	Chip, 4700 ohm, 1/16W

Location No.	Part No.	Description
R7779	24872102	Chip, 1k ohm, 1/16W
R7780	24872102	Chip, 1k ohm, 1/16W
R7781	24872333	Chip, 33k ohm, 1/16W
R7786	24872472	Chip, 4700 ohm, 1/16W
R7787	24872472	Chip, 4700 ohm, 1/16W
R7788	24382221	OMF, 220 ohm, 1W
R7795	24872332	Chip, 3300 ohm, 1/16W
R7796	24872332	Chip, 3300 ohm, 1/16W
R7797	24872332	Chip, 3300 ohm, 1/16W
R7798	24872221	Chip, 220 ohm, 1/16W
RA01	24872102	Chip, 1k ohm, 1/16W
RA02	24872101	Chip, 100 ohm, 1/16W
RA03	24872101	Chip, 100 ohm, 1/16W
RA04	24872102	Chip, 1k ohm, 1/16W
RA05	24872102	Chip, 1k ohm, 1/16W
RA06	24872102	Chip, 1k ohm, 1/16W
RA07	24872102	Chip, 1k ohm, 1/16W
RA09	24872103	Chip, 10k ohm, 1/16W
RA10	24872103	Chip, 10k ohm, 1/16W
RA11	24872102	Chip, 1k ohm, 1/16W
RA12	24872102	Chip, 1k ohm, 1/16W
RA13	24872102	Chip, 1k ohm, 1/16W
RA15	24872102	Chip, 1k ohm, 1/16W
RA16	24872102	Chip, 1k ohm, 1/16W
RA17	24872102	Chip, 1k ohm, 1/16W
RA18	24872103	Chip, 10k ohm, 1/16W
RA26	24872101	Chip, 100 ohm, 1/16W
RA27	24872101	Chip, 100 ohm, 1/16W
RA29	24872102	Chip, 1k ohm, 1/16W
RA30	24872102	Chip, 1k ohm, 1/16W
RA31	24872102	Chip, 1k ohm, 1/16W
RA33	24872102	Chip, 1k ohm, 1/16W
RA34	24872102	Chip, 1k ohm, 1/16W
RA35	24872102	Chip, 1k ohm, 1/16W
RA39	24872102	Chip, 1k ohm, 1/16W
RA46	24872332	Chip, 3300 ohm, 1/16W
RA47	24872332	Chip, 3300 ohm, 1/16W
RA48	24872332	Chip, 3300 ohm, 1/16W
RA49	24872332	Chip, 3300 ohm, 1/16W
RA50	24872682	Chip, 6800 ohm, 1/16W
RA51	24872151	Chip, 150 ohm, 1/16W
RA52	24872103	Chip, 10k ohm, 1/16W
RA54	24872332	Chip, 3300 ohm, 1/16W
RA55	24872102	Chip, 1k ohm, 1/16W
RA56	24872102	Chip, 1k ohm, 1/16W
RA59	24872101	Chip, 100 ohm, 1/16W
RA60	24872101	Chip, 100 ohm, 1/16W
RA71	24366683	CF, 68k ohm
RA72	24366223	CF, 22k ohm
RA72	24872332	Chip, 3300 ohm, 1/16W
RA73	24366103	CF, 10k ohm
RA73	24872332	Chip, 3300 ohm, 1/16W
RA74	24872153	Chip, 15k ohm, 1/16W
RA75	24872153	Chip, 15k ohm, 1/16W
RA76	24366822	CF, 8200 ohm
RA76	24872103	Chip, 10k ohm, 1/16W
RA77	24366153	CF, 15k ohm
RA77	24872103	Chip, 10k ohm, 1/16W
RA78	24366273	CF, 27k ohm
RA78	24872333	Chip, 33k ohm, 1/16W
RA79	24366823	CF, 82k ohm
RA79	24872333	Chip, 33k ohm, 1/16W
RA80	24872101	Chip, 100 ohm, 1/16W
RB01	24366271	CF, 270 ohm

Location No.	Part No.	Description
RB03	24872101	Chip, 100 ohm, 1/16W
RB04	24366103	CF, 10k ohm
RB14	24872153	Chip, 15k ohm, 1/16W
RB15	24366471	CF, 470 ohm
RB15	24872153	Chip, 15k ohm, 1/16W
RB16	24872332	Chip, 3300 ohm, 1/16W
RB17	24872332	Chip, 3300 ohm, 1/16W
RB19	24366470	CF, 47 ohm
RB30	24366103	CF, 10k ohm
RB41	24366273	CF, 27k ohm
RB41	24366681	CF, 680 ohm
RB42	24366153	CF, 15k ohm
RB61	24872222	Chip, 2200 ohm, 1/16W
RB62	24872103	Chip, 10k ohm, 1/16W
RB63	24872472	Chip, 4700 ohm, 1/16W
RB81	24872122	Chip, 1200 ohm, 1/16W
RB82	24872123	Chip, 12k ohm, 1/16W
RB83	24872123	Chip, 12k ohm, 1/16W
RB84	24872562	Chip, 5600 ohm, 1/16W
RB90	24872392	Chip, 3900 ohm, 1/16W
RB91	24872473	Chip, 47k ohm, 1/16W
RB92	24872271	Chip, 270 ohm, 1/16W
RB93	24872271	Chip, 270 ohm, 1/16W
RB94	24872222	Chip, 2200 ohm, 1/16W
RB95	24872222	Chip, 2200 ohm, 1/16W
RB96	24872273	Chip, 27k ohm, 1/16W
RB97	24872273	Chip, 27k ohm, 1/16W
RB98	24872102	Chip, 1k ohm, 1/16W
RD09	24366101	CF, 100 ohm
RD11	24366101	CF, 100 ohm
RD13	24366222	CF, 2200 ohm
RD14	24366103	CF, 10k ohm
RD16	24366103	CF, 10k ohm
RR08	24872332	Chip, 3300 ohm, 1/16W
RR09	24872222	Chip, 2200 ohm, 1/16W
RR10	24872102	Chip, 1k ohm, 1/16W
RR12	24872151	Chip, 150 ohm, 1/16W
RR13	24872151	Chip, 150 ohm, 1/16W
RR14	24872151	Chip, 150 ohm, 1/16W
RR15	24872151	Chip, 150 ohm, 1/16W
RR16	24872151	Chip, 150 ohm, 1/16W
RR17	24872151	Chip, 150 ohm, 1/16W
RR18	24872332	Chip, 3300 ohm, 1/16W
RR40	24872101	Chip, 100 ohm, 1/16W
RR42	24872101	Chip, 100 ohm, 1/16W
RR44	24872101	Chip, 100 ohm, 1/16W
RR52	24872102	Chip, 1k ohm, 1/16W
RR53	24872471	Chip, 470 ohm, 1/16W
RR54	24872102	Chip, 1k ohm, 1/16W
RR55	24872471	Chip, 470 ohm, 1/16W
RR56	24872102	Chip, 1k ohm, 1/16W
RR57	24872471	Chip, 470 ohm, 1/16W
RR58	24872103	Chip, 10k ohm, 1/16W
RR59	24872104	Chip, 100k ohm, 1/16W
RR92	24872222	Chip, 2200 ohm, 1/16W
RR99	24872102	Chip, 1k ohm, 1/16W
RS02	24366472	CF, 4700 ohm
RS04	24366102	CF, 1k ohm
RS06	24366102	CF, 1k ohm
RS07	24366103	CF, 10k ohm
RS08	24366103	CF, 10k ohm
RS09	24366102	CF, 1k ohm
RS10	24366102	CF, 1k ohm
RS12	24366103	CF, 10k ohm

Location No.	Part No.	Description
RS21	24366104	CF, 100k ohm
RS22	24366104	CF, 100k ohm
RS25	24366223	CF, 22k ohm
RS26	24366223	CF, 22k ohm
RS27	24366471	CF, 470 ohm
RS28	24366471	CF, 470 ohm
RS29	24366104	CF, 100k ohm
RS30	24366104	CF, 100k ohm
RS31	24366103	CF, 10k ohm
RS32	24366104	CF, 100k ohm
RS33	24366222	CF, 2200 ohm
RS34	24366222	CF, 2200 ohm
RS35	24366103	CF, 10k ohm
RS36	24366103	CF, 10k ohm
RS37	24366101	CF, 100 ohm
RS40	24366101	CF, 100 ohm
RS42	24366101	CF, 100 ohm
RS48	24366101	CF, 100 ohm
RS49	24366103	CF, 10k ohm
RS51	24366103	CF, 10k ohm
RS52	24366103	CF, 10k ohm
RV01	24366472	CF, 4700 ohm (50A60/55A60/61A60)
RV03	24366101	CF, 100 ohm
RV04	24366101	CF, 100 ohm
RV10	24366100	CF, 10 ohm
RV11	24366100	CF, 10 ohm
RV12	24366100	CF, 10 ohm
RV13	24366100	CF, 10 ohm
RV14	24366100	CF, 10 ohm
RV15	24366222	CF, 2200 ohm
RV20	24366750	CF, 75 ohm
RV21	24366750	CF, 75 ohm
RV22	24366750	CF, 75 ohm
RV23	24366332	CF, 3300 ohm
RV24	24366750	CF, 75 ohm
RV25	24366750	CF, 75 ohm
RV26	24366750	CF, 75 ohm
RV28	24366472	CF, 4700 ohm
RV31	24366332	CF, 3300 ohm
RV32	24366750	CF, 75 ohm
RV33	24366680	CF, 68 ohm
RV34	24366750	CF, 75 ohm
RV40	24366223	CF, 22k ohm
RV41	24366123	CF, 12k ohm
RV42	24366561	CF, 560 ohm
RV43	24366471	CF, 470 ohm
RV44	24366471	CF, 470 ohm
RV45	24366681	CF, 680 ohm
RV46	24366102	CF, 1k ohm
RV47	24366102	CF, 1k ohm
RV48	24366102	CF, 1k ohm
RV49	24366911	CF, 910 ohm
RV60	24366682	CF, 6800 ohm
RV63	24366102	CF, 1k ohm
RV67	24366750	CF, 75 ohm
RV74	24366680	CF, 68 ohm
RV83	24366332	CF, 3300 ohm
RV84	24366750	CF, 75 ohm
RV85	24552181	OMF, 180 ohm, 1/2W
RV89	24366750	CF, 75 ohm
RV90	24366103	CF, 10k ohm
RV91	24366302	CF, 3k ohm
RV92	24366103	CF, 10k ohm

Location No.	Part No.	Description
RV93	24366103	CF, 10k ohm
RV94	24366392	CF, 3900 ohm
RV95	24366123	CF, 12k ohm
RV96	24366274	CF, 270k ohm
RV97	24366331	CF, 330 ohm
RV98	24366472	CF, 4700 ohm
RW02	24366821	CF, 820 ohm
RW09	24366563	CF, 56k ohm
RW10	24872102	Chip, 1k ohm, 1/16W
RW13	24366393	CF, 39k ohm
RW14	24552121	OMF, 120 ohm, 1/2W
RW14	24872101	Chip, 100 ohm, 1/16W
RW15	24366223	CF, 22k ohm
RW16	24366273	CF, 27k ohm
RW16	24872101	Chip, 100 ohm, 1/16W
RW17	24366333	CF, 33k ohm
RW18	24366101	CF, 100 ohm
RW19	24366100	CF, 10 ohm
RW20	24366392	CF, 3900 ohm
RW22	24366102	CF, 1k ohm
RW23	24366471	CF, 470 ohm
RW24	24366470	CF, 47 ohm
RW25	24366182	CF, 1800 ohm
RW30	24552100	OMF, 10 ohm, 1/2W
RW30	24872102	Chip, 1k ohm, 1/16W
RW31	24552331	OMF, 330 ohm, 1/2W
RW32	24366820	CF, 82 ohm
RW33	24366683	CF, 68k ohm
RW34	24366820	CF, 82 ohm
RW35	24366683	CF, 68k ohm
RW36	24366330	CF, 33 ohm
RW37	24366152	CF, 1500 ohm
RW38	24366102	CF, 1k ohm
RW39	24366152	CF, 1500 ohm
RW40	24366330	CF, 33 ohm
RW40	24872182	Chip, 1800 ohm, 1/16W
RW41	24366279	CF, 2.7 ohm
RW42	24366279	CF, 2.7 ohm
RW43	24554221	OMF, 220 ohm, 2W
RW44	24366122	CF, 1200 ohm
RW45	24366122	CF, 1200 ohm
RW51	24366683	CF, 68k ohm
RW52	24366473	CF, 47k ohm
RW53	24366333	CF, 33k ohm
RW54	24366153	CF, 15k ohm
RW55	24366102	CF, 1k ohm
RW57	24366222	CF, 2200 ohm
RW68	24366333	CF, 33k ohm
RW69	24366223	CF, 22k ohm
RW74	24366471	CF, 470 ohm
RW76	24366561	CF, 560 ohm
RW77	24366561	CF, 560 ohm
RW78	24366681	CF, 680 ohm
RW91	24366102	CF, 1k ohm
RW92	24366101	CF, 100 ohm
RW93	24366101	CF, 100 ohm
RW94	24366101	CF, 100 ohm
RY01	24872103	Chip, 10k ohm, 1/16W
RY80	24366331	CF, 330 ohm
RY81	24366101	CF, 100 ohm
RY82	24366102	CF, 1k ohm
RY87	24366100	CF, 10 ohm
RZ01	24872102	Chip, 1k ohm, 1/16W
RZ02	24872102	Chip, 1k ohm, 1/16W

Location No.	Part No.	Description
RZ03	24872332	Chip, 3300 ohm, 1/16W
RZ04	24872122	Chip, 1200 ohm, 1/16W
RZ05	24872471	Chip, 470 ohm, 1/16W
RZ06	24872821	Chip, 820 ohm, 1/16W
RZ08	24872122	Chip, 1200 ohm, 1/16W
RZ09	24872101	Chip, 100 ohm, 1/16W
RZ10	24872471	Chip, 470 ohm, 1/16W
RZ12	24872332	Chip, 3300 ohm, 1/16W
RZ13	24872122	Chip, 1200 ohm, 1/16W
RZ14	24872821	Chip, 820 ohm, 1/16W
RZ15	24872821	Chip, 820 ohm, 1/16W
RZ17	24872471	Chip, 470 ohm, 1/16W
RZ18	24872122	Chip, 1200 ohm, 1/16W
RZ19	24872332	Chip, 3300 ohm, 1/16W
RZ20	24872101	Chip, 100 ohm, 1/16W
RZ22	24872471	Chip, 470 ohm, 1/16W
RZ29	24872331	Chip, 330 ohm, 1/16W
RZ30	24872331	Chip, 330 ohm, 1/16W

COILS & TRANSFORMERS

L101	23289845	Coil, Peaking, TRF4680AT
L111	23289845	Coil, Peaking, TRF4680AT (50A60/55A60/61A60)
L115	23103852	Coil, Filter, TEM2028AH (50A60/55A60/61A60)
L121	23238562	Coil, Peaking, TRF4109AJ
L122	23238562	Coil, Peaking, TRF4109AJ
L301	23237975	Coil, Peaking, TRF4101AC
L302	23248073	Coil, Choke, TLN3299D
L303	23248073	Coil, Choke, TLN3299D
L304	23103859	Coil (Ferrite Bead), TEM2011
L400	23289840	Coil, Peaking, TRF4100AT
L401	23103775	Coil (Ferrite Bead), TEM2014
L402	23248243	Coil, Choke, TLN3496AH
⚠L403	23233977	Coil, Linearity, TLN2203AG
L404	23248242	Coil, Choke, TLN3495AH
L405	23221076	Coil, Choke, TLN1015R
L406	23289560	Coil, Peaking, TRF4560AF
⚠L408	23248244	Coil, Choke, TLN3497AH
L409	23103775	Coil (Ferrite Bead), TEM2014
⚠L462	23231135	Deflection Yoke, TDY707AS(R)
⚠L463	23231135	Deflection Yoke, TDY707AS(R)
⚠L464	23231135	Deflection Yoke, TDY707AS(R)
L472	23102457	Magnet, MAG-1102
L473	23102457	Magnet, MAG-1102
L474	23102457	Magnet, MAG-1102
L481	23237975	Coil, Peaking, TRF4101AC
L501	23289853	Coil, Peaking, TRF4120AT
L502	23289853	Coil, Peaking, TRF4120AT
L503	23289853	Coil, Peaking, TRF4120AT
L701	23238562	Coil, Peaking, TRF4109AJ
L702	23238562	Coil, Peaking, TRF4109AJ
L707	23238562	Coil, Peaking, TRF4109AJ
L708	23238562	Coil, Peaking, TRF4109AJ
L709	23238562	Coil, Peaking, TRF4109AJ
L710	23238562	Coil, Peaking, TRF4109AJ
L711	23238562	Coil, Peaking, TRF4109AJ
L712	23238562	Coil, Peaking, TRF4109AJ
L713	23238562	Coil, Peaking, TRF4109AJ
L714	23238562	Coil, Peaking, TRF4109AJ
L720	23289102	Coil, Peaking, TRF4102AJ
L721	23237805	Coil, Peaking, TRF4222
L722	23289102	Coil, Peaking, TRF4102AJ
L723	23237805	Coil, Peaking, TRF4222
L724	23289102	Coil, Peaking, TRF4102AJ
L725	23237805	Coil, Peaking, TRF4222
L726	23289102	Coil, Peaking, TRF4102AJ
L727	23237805	Coil, Peaking, TRF4222
L728	23289102	Coil, Peaking, TRF4102AJ
L729	23237805	Coil, Peaking, TRF4222
L730	23289102	Coil, Peaking, TRF4102AJ
L731	23237805	Coil, Peaking, TRF4222
L737	23289560	Coil, Peaking, TRF4560AF
L738	23289560	Coil, Peaking, TRF4560AF
L739	23289560	Coil, Peaking, TRF4560AF
L740	23289560	Coil, Peaking, TRF4560AF
L742	23103866	Chip (Ferrite Bead), TEM2105T
L745	23103866	Chip (Ferrite Bead), TEM2105T
L746	23103866	Chip (Ferrite Bead), TEM2105T
L748	23103866	Chip (Ferrite Bead), TEM2105T
L749	23103866	Chip (Ferrite Bead), TEM2105T
L750	23103864	Coil (Ferrite Bead), TEM2103T
L751	23103864	Coil (Ferrite Bead), TEM2103T
L752	23103795	Chip, Impeder, MMZ2012S301A
L851	23103880	Coil (Ferrite Bead), TEM2011Y
L852	23103880	Coil (Ferrite Bead), TEM2011Y
L853	23248073	Coil, Choke, TLN3299D
L854	23248073	Coil, Choke, TLN3299D
L861	23103880	Coil (Ferrite Bead), TEM2011Y
L862	23103937	Coil (Ferrite Bead), TEM2004
L881	23103880	Coil (Ferrite Bead), TEM2011Y
L882	23103880	Coil (Ferrite Bead), TEM2011Y
L885	23248073	Coil, Choke, TLN3299D
L888	23103880	Coil (Ferrite Bead), TEM2011Y
L889	23103880	Coil (Ferrite Bead), TEM2011Y
L891	23103880	Coil (Ferrite Bead), TEM2011Y
L892	23103880	Coil (Ferrite Bead), TEM2011Y
L893	23103880	Coil (Ferrite Bead), TEM2011Y
L894	23103880	Coil (Ferrite Bead), TEM2011Y
L895	23248073	Coil, Choke, TLN3299D
L896	23248073	Coil, Choke, TLN3299D
L897	23248087	Coil, Choke, TLN3312D
L898	23248087	Coil, Choke, TLN3312D
L961	23289100	Coil, Peaking, TRF4100AF
L962	23237991	Coil, Peaking, TRF4479AC
L963	23237975	Coil, Peaking, TRF4101AC
L7701	23103859	Coil (Ferrite Bead), TEM2011
L7702	23103859	Coil (Ferrite Bead), TEM2011
L7703	23103859	Coil (Ferrite Bead), TEM2011
L7704	23103859	Coil (Ferrite Bead), TEM2011
L7705	23103859	Coil (Ferrite Bead), TEM2011
L7706	23103859	Coil (Ferrite Bead), TEM2011
LA22	23245830	Chip, Inductor, TRF4100CB
LA49	23245830	Chip, Inductor, TRF4100CB
LV01	23103852	Coil, Filter, TEM2028AH
LV02	23103852	Coil, Filter, TEM2028AH
LV05	23289560	Coil, Peaking, TRF4560AF
LV06	23289560	Coil, Peaking, TRF4560AF
LV07	23238719	Coil, Peaking, TRF4399AJ
LV11	23289100	Coil, Peaking, TRF4100AF
LV13	23289100	Coil, Peaking, TRF4100AF
LV14	23289100	Coil, Peaking, TRF4100AF
LV20	23238705	Coil, Peaking, TRF4560AJ
LV41	23289470	Coil, Peaking, TRF4470AF
LW01	23103845	Coil, TEM2030AY
LW02	23261974	Coil, Choke, HC5-035
LW04	23103859	Coil (Ferrite Bead), TEM2011

Location No.	Part No.	Description
LW04	23245834	Chip, Inductor, TRF4220CB
LW05	23103859	Coil (Ferrite Bead), TEM2011
LW07	23289220	Coil, Peaking, TRF4220AF
LY01	23245832	Chip, Inductor, TRF4150CB
LY22	23103852	Coil, Filter, TEM2028AH
LZ01	23238710	Coil, Peaking, TRF4220AJ
LZ02	23238714	Coil, Peaking, TRF4100AJ
LZ03	23238714	Coil, Peaking, TRF4100AJ
LZ04	23238714	Coil, Peaking, TRF4100AJ
LZ05	23238714	Coil, Peaking, TRF4100AJ
LZ08	23238707	Coil, Peaking, TRF4390AJ
LZ11	23238710	Coil, Peaking, TRF4220AJ
LZ12	23238710	Coil, Peaking, TRF4220AJ
T401	23224367	Transformer, Horiz. Drive, TLN1098AH
T403	23224364	Transformer, Focus, TLN2168AH
⚠T461	23236623	Transformer, Flyback, TFB3086AD
⚠T461A	23192940	Anode Cap, TCCP5157
T801	23211698	Line Filter, TRF3218AK
T802	23211729	Line Filter, TRF3232AQ
T840	23217233	Transformer, Converter, TPW1547AZ
T862	23217463	Transformer, Converter, TPW3447AS

SEMICONDUCTORS

Q151	A6541130	Transistor, 2SA1162-Y (50A60/55A60/61A60)
Q152	A6335470	Transistor, 2SC2712-Y (50A60/55A60/61A60)
Q201	A6335470	Transistor, 2SC2712-Y (50A60/55A60/61A60)
Q202	A6335470	Transistor, 2SC2712-Y
Q203	A6361770	Transistor, 2SC3437-Y
Q261	A6335470	Transistor, 2SC2712-Y
Q262	A6541130	Transistor, 2SA1162-Y
Q263	A6541130	Transistor, 2SA1162-Y
Q301	23319787	IC, LA7833S
Q301B	70391355	Screw, BITTB3X8 SZN
Q302	B0384625	IC, TA8859CP
Q303	A6335470	Transistor, 2SC2712-Y
Q304	B0351525	IC, TA75902FB
Q305	A6541130	Transistor, 2SA1162-Y
Q306	B0351525	IC, TA75902FB
Q308	A6335470	Transistor, 2SC2712-Y
Q309	A6541130	Transistor, 2SA1162-Y
Q310	A6335470	Transistor, 2SC2712-Y
Q401	A6330069	Transistor, 2CS2482 FA-1
Q402	A6734590	Transistor, 2SC752(G)TM-Y
Q403	A6073390	Transistor, 2SK2920
Q404	A6873777	Transistor, 2SD2553
Q404B	72471082	Screw, BRDT2W3X10 SZN
Q405	A6734590	Transistor, 2SC752(G)TM-Y
Q406	23314548	Transistor, 2SC4256 (50A60/55A60/61A60)
Q407	B0347500	IC, TA75358P
Q408	23314962	Transistor, KTA1266 Y
Q409	23314965	Transistor, KTC3198 Y
Q430	23314965	Transistor, KTC3198 Y
Q481	B0347235	IC, TA75339AP
Q492	A6547305	Transistor, 2SA1321(FA,C)
Q501	B0385677	IC, TA1222BN
Q502	A6335470	Transistor, 2SC2712-Y
Q503	A6541130	Transistor, 2SA1162-Y
Q520	A6541130	Transistor, 2SA1162-Y
Q521	A6541130	Transistor, 2SA1162-Y
Q522	A6541130	Transistor, 2SA1162-Y
Q523	A6335470	Transistor, 2SC2712-Y
Q524	A6004010	Transistor, RN1401
Q525	A6004010	Transistor, RN1401
Q526	A6004010	Transistor, RN1401
Q601	B0376885	IC, TA8213K
Q612	A6541130	Transistor, 2SA1162-Y
Q621	23000381	IC, CXA2021S
Q622	B01A0119	IC, TA1304F(EL)
Q661	A6359870	Transistor, 2SC3326-B
Q662	A6359870	Transistor, 2SC3326-B
Q663	23906596	IC, BA4558
Q664	A6014040	Transistor, RN2404
Q681	A6359870	Transistor, 2SC3326-B
Q682	A6359870	Transistor, 2SC3326-B
Q701	B01B4088	IC, TC190C060AF-
Q702	23904743	IC, LC89066M
Q703	23905014	IC, LC78816M
Q704	23905014	IC, LC78816M
Q705	23905014	IC, LC78816M
Q707	23905013	IC, TLC29321PW
Q709	23906908	IC, MC33078DR2
Q711	23904665	IC, NM24C04EN
Q715	23906908	IC, MC33078DR2
Q717	23906908	IC, MC33078DR2
Q719	23906908	IC, MC33078DR2
Q751	23905094	IC, STR392-110
Q752	23905094	IC, STR392-110
Q754	23904521	IC, AN7805
Q754B	70391356	Screw, BITTB3X10 SZN
Q755	23904525	IC, AN7809
Q755B	70391356	Screw, BITTB3X10 SZN
Q764	B0485884	IC, TC74HC14AF
Q765	A6335470	Transistor, 2SC2712-Y
Q766	A6335470	Transistor, 2SC2712-Y
Q767	B0488448	IC, TC74HC4066AF
Q801	23906540	IC, STR-Z4267
Q819	23314965	Transistor, KTC3198 Y
Q830	23905977	IC, PQ09RD11
Q830B	70391356	Screw, BITTB3X10 SZN
Q831	23905976	IC, PQ05RD11
Q831B	70391356	Screw, BITTB3X10 SZN
Q840	23318299	IC, L78MR05
Q841	70129444	IC, PST994D
Q843	23314965	Transistor, KTC3198 Y
Q862	A8643112	Photo Coupler, TLP621(GRL-L
⚠Q863	23319305	IC, SE140N, LF4
Q901	A6372621	Transistor, 2SC5360
Q902	A6317440	Transistor, 2SC1815-Y
Q911	A6372621	Transistor, 2SC5360
Q913	A6317440	Transistor, 2SC1815-Y
Q921	A6372621	Transistor, 2SC5360
Q922	A6317440	Transistor, 2SC1815-Y
Q961	A6317440	Transistor, 2SC1815-Y
Q962	A6509140	Transistor, 2SA562TM-Y
Q963	A6317440	Transistor, 2SC1815-Y
Q964	A6534040	Transistor, 2SA1015-Y
Q965	A6317440	Transistor, 2SC1815-Y
Q966	A6534040	Transistor, 2SA1015-Y
Q971	A6317440	Transistor, 2SC1815-Y

Location No.	Part No.	Description
Q972	A6317440	Transistor, 2SC1815-Y
Q973	A6317440	Transistor, 2SC1815-Y
Q974	A6317440	Transistor, 2SC1815-Y
Q975	A6317440	Transistor, 2SC1815-Y
Q976	A6317440	Transistor, 2SC1815-Y
Q981	A6534040	Transistor, 2SA1015-Y
Q982	A6534040	Transistor, 2SA1015-Y
Q983	A6317440	Transistor, 2SC1815-Y
Q984	A6534040	Transistor, 2SA1015-Y
QA01	23000374	IC, MN102L35GF
QA02	23905666	IC, AT24C1610PC
QA71	A6541130	Transistor, 2SA1162-Y
QB01	23114528	Transistor, 2SC1740S, Q
QB03	A6004050	Transistor, RN1405
QB14	A6541130	Transistor, 2SA1162-Y
QB30	23314965	Transistor, KTC3198 Y
QB61	A6361770	Transistor, 2SC3437-Y
QB81	A6359870	Transistor, 2SC3326-B
QB82	A6359870	Transistor, 2SC3326-B
QB83	A6541130	Transistor, 2SA1162-Y
QB84	A6335470	Transistor, 2SC2712-Y
QB85	A6541130	Transistor, 2SA1162-Y
QB86	A6541130	Transistor, 2SA1162-Y
QB87	A6541130	Transistor, 2SA1162-Y
QB88	A6541130	Transistor, 2SA1162-Y
QB92	A6335470	Transistor, 2SC2712-Y
QD01	B0377277	IC, TA8173AP
QR02	A6335470	Transistor, 2SC2712-Y
QR14	A6541130	Transistor, 2SA1162-Y
QR15	A6541130	Transistor, 2SA1162-Y
QR16	A6541130	Transistor, 2SA1162-Y
QR17	23318981	IC, MC14053BFEL
QS01	A6342200	Transistor, 2CS2878-A
QS11	A6342200	Transistor, 2CS2878-A
QS12	A6012040	Transistor, RN2204
QS13	23314965	Transistor, KTC3198 Y
QS14	23314965	Transistor, KTC3198 Y
QV01	B0384761	IC, TA8851CN
QV20	A6002040	Transistor, RN1204
QV21	23114528	Transistor, 2SC1740S, Q
QV22	23114530	Transistor, 2SA933S-Q
QV23	23114530	Transistor, 2SA933S-Q
QV40	23114528	Transistor, 2SC1740S, Q
QV41	23114528	Transistor, 2SC1740S, Q
QV42	23114530	Transistor, 2SA933S-Q
QV43	23114530	Transistor, 2SA933S-Q
QV48	23114528	Transistor, 2SC1740S, Q
QW01	23318981	IC, MC14053BFEL
QW05	A6335470	Transistor, 2SC2712-Y
QW06	A6317440	Transistor, 2SC1815-Y
QW07	A6734590	Transistor, 2SC752(G)TM-Y
QW09	23114528	Transistor, 2SC1740S, Q
QW10	23114530	Transistor, 2SA933S-Q
QW11	A6335470	Transistor, 2SC2712-Y
QW11	A6550640	Transistor, 2SA1837
QW12	A6369650	Transistor, 2SC4793
QW17	A6004010	Transistor, RN1401
QW19	A6317440	Transistor, 2SC1815-Y
QW20	A6317440	Transistor, 2SC1815-Y
QW52	23114528	Transistor, 2SC1740S, Q
QW53	23114528	Transistor, 2SC1740S, Q
QW54	23114528	Transistor, 2SC1740S, Q
QW60	23114530	Transistor, 2SA933S-Q
QW68	23114528	Transistor, 2SC1740S, Q

Location No.	Part No.	Description
QY26	23114528	Transistor, 2SC1740S, Q
QZ01	B0410895	IC, TC90A49P
QZ02	A6541130	Transistor, 2SA1162-Y
QZ03	A6541130	Transistor, 2SA1162-Y
QZ04	A6541130	Transistor, 2SA1162-Y
QZ05	A6335470	Transistor, 2SC2712-Y
QZ06	A6541130	Transistor, 2SA1162-Y
QZ07	A6541130	Transistor, 2SA1162-Y
QZ08	A6335470	Transistor, 2SC2712-Y
D101	23316756	Diode, Zener, MTZJ33D
D201	23118041	Diode, MA111-(TX)
D215	23118041	Diode, MA111-(TX)
D216	23118041	Diode, MA111-(TX)
D217	23118041	Diode, MA111-(TX)
D218	23118041	Diode, MA111-(TX)
D219	23118041	Diode, MA111-(TX)
D220	23118041	Diode, MA111-(TX)
D221	23118041	Diode, MA111-(TX)
D222	23118041	Diode, MA111-(TX)
D223	23118041	Diode, MA111-(TX)
D230	23316753	Diode, Zener, MTZJ33A
D301	23316575	Diode, Zener, MA8062-H, TX
D302	23118094	Diode, EU2A, LF-F10
D303	23316610	Diode, Zener, MA8180-M, TX
D304	23316794	Diode, SC570ALFE2
D305	23118822	Diode, ERB12-02
D306	23118822	Diode, ERB12-02
D307	23118041	Diode, MA111-(TX)
D310	23118041	Diode, MA111-(TX)
D311	23118041	Diode, MA111-(TX)
D320	23316576	Diode, Zener, MA8068-L, TX
D336	23316583	Diode, Zener, MA8039-H, TX
D401	23118094	Diode, EU2A, LF-F10
D402	23118094	Diode, EU2A, LF-F10
D403	23316254	Diode, ERC06-15L
D404	23316969	Diode, ERD29-06J
D405	23316254	Diode, ERC06-15L
D406	23118094	Diode, EU2A, LF-F10
D407	23118707	Diode, RP 1H, LF-C1 (50A60/55A60/61A60)
D408	A7978850	Diode, S5295G
D412	23118094	Diode, EU2A, LF-F10
D413	23118707	Diode, RP 1H, LF-C1 (50A60/55A60/61A60)
D415	23316731	Diode, Zener, MTZJ18B
D421	23118041	Diode, MA111-(TX)
D422	23118041	Diode, MA111-(TX)
D430	23316594	Diode, Zener, MA8110-M, TX
D431	23118041	Diode, MA111-(TX)
D481	23118859	Diode, 1SS133
⚠D482	23115774	Diode, Zener, RD6.2E(4)
D490	23118859	Diode, 1SS133
D491	23316758	Diode, Zener, MTZJ36B
D512	23118041	Diode, MA111-(TX)
D513	23316587	Diode, Zener, MA8091-L, TX
D531	23316573	Diode, Zener, MA8062-L, TX
D532	23118822	Diode, ERB12-02
D601	23118041	Diode, MA111-(TX)
D602	23118041	Diode, MA111-(TX)
D603	23118041	Diode, MA111-(TX)
D604	23118041	Diode, MA111-(TX)
D607	23316616	Diode, Zener, MA8220-M, TX
D608	23316616	Diode, Zener, MA8220-M, TX
D611	23118041	Diode, MA111-(TX)

Location No.	Part No.	Description
D661	23316570	Diode, Zener, MA8056-L, TX
D701	23115537	Diode, 1SS131
D702	23115537	Diode, 1SS131
D703	23115537	Diode, 1SS131
D704	23115537	Diode, 1SS131
D705	23316675	Diode, Zener, MTZJ6.2B
D706	23316675	Diode, Zener, MTZJ6.2B
D707	23316675	Diode, Zener, MTZJ6.2B
D801	23357041	Diode, LN6SB60-F05
D819	A7801205	SCR, SF0R3G42(N,G5H1)
D820	23316757	Diode, Zener, MTZJ36A
D821	23118859	Diode, 1SS133
D840	23316962	Diode, S1WBA20 4101
D845	23118859	Diode, 1SS133
D851	23357215	Diode, D4SBS6
D862	23118094	Diode, EU2A, LF-F10
⚠D863	23316689	Diode, Zener, MTZJ10A
D864	23118094	Diode, EU2A, LF-F10
D873	23316747	Diode, Zener, MTZJ27C
D875	23316688	Diode, Zener, MTZJ9.1C
D876	23316747	Diode, Zener, MTZJ27C
D877	23316747	Diode, Zener, MTZJ27C
D878	23316686	Diode, Zener, MTZJ9.1A
D881	23118859	Diode, 1SS133
D884	23357217	Diode, D4SBL40
D885	23357216	Diode, D4SBL20U
D891	23357214	Diode, D4SBS4
D892	23357042	Diode, FMX-12S(023
D899	24000948	Varistor, TNR15G391K
D901	23118859	Diode, 1SS133
D902	23118859	Diode, 1SS133
D911	23118859	Diode, 1SS133
D912	23118859	Diode, 1SS133
D921	23118859	Diode, 1SS133
D922	23118859	Diode, 1SS133
D924	23118859	Diode, 1SS133
D925	23118859	Diode, 1SS133
D961	23118859	Diode, 1SS133
D965	23118859	Diode, 1SS133
D966	23118859	Diode, 1SS133
D975	23118859	Diode, 1SS133
D7703	23316675	Diode, Zener, MTZJ6.2B
D7705	23118041	Diode, MA111-(TX)
D7706	23118041	Diode, MA111-(TX)
D7707	23118041	Diode, MA111-(TX)
D7708	23118041	Diode, MA111-(TX)
D7709	23316675	Diode, Zener, MTZJ6.2B
D7710	23316716	Diode, Zener, MTZJ11B
D7711	23316687	Diode, Zener, MTZJ9.1B
D7712	23118041	Diode, MA111-(TX)
D7713	23118041	Diode, MA111-(TX)
D7717	23316675	Diode, Zener, MTZJ6.2B
D7718	23316675	Diode, Zener, MTZJ6.2B
D7719	23316675	Diode, Zener, MTZJ6.2B
DA02	23316574	Diode, Zener, MA8062-M, TX
DA11	23118859	Diode, 1SS133
DA34	23118041	Diode, MA111-(TX)
DA43	23118041	Diode, MA111-(TX)
DA44	23118041	Diode, MA111-(TX)
DA45	23118041	Diode, MA111-(TX)
DA46	23118041	Diode, MA111-(TX)
DB01	23358501	Diode (LED), SCL003URC5F
DB13	23358522	Diode (LED), SIR-56SB3F
DB30	23118859	Diode, 1SS133

Location No.	Part No.	Description
DV01	23316686	Diode, Zener, MTZJ9.1A
DV02	23316686	Diode, Zener, MTZJ9.1A
DV03	23316686	Diode, Zener, MTZJ9.1A
DV07	23316686	Diode, Zener, MTZJ9.1A
DV08	23316686	Diode, Zener, MTZJ9.1A
DV09	23316686	Diode, Zener, MTZJ9.1A
DV11	23316686	Diode, Zener, MTZJ9.1A
DV12	23316686	Diode, Zener, MTZJ9.1A
DV13	23316686	Diode, Zener, MTZJ9.1A
DV17	23316686	Diode, Zener, MTZJ9.1A
DV25	23118859	Diode, 1SS133
DW04	23118859	Diode, 1SS133
DW05	23118859	Diode, 1SS133
DW21	23118859	Diode, 1SS133

MISCELLANEOUS

B224	23035412	Screw, BTB 4X12 SZN
B225	23035412	Screw, BTB 4X12 SZN
B230	23037312	Screw, BTBW 3X12 SZN
B233	23035412	Screw, BTB 4X12 SZN
B234	23035412	Screw, BTB 4X12 SZN
B235	23035310	Screw, BTB 3X8 SZN
BB30	23903022	Socket, 8P
BB31	23903022	Socket, 8P
BB300	23368627	Plug, 8P
F470	23144906	Fuse, 1.25A, 125V
F470A	23165433	Holder, Fuse
F801	23144481	Fuse, 7.0A, 125V
F801A	23165433	Holder, Fuse
F850	23144893	Fuse, 3.15, 125V
F850A	23165433	Holder, Fuse
F851	23144893	Fuse, 3.15, 125V
F851A	23165433	Holder, Fuse
F860	23144511	Fuse, 4.0A, 125V
F889	23144893	Fuse, 3.15, 125V
F889A	23165433	Holder, Fuse
F890	23144897	Fuse, 2.0A, 125V
F890A	23165433	Holder, Fuse
F891	23144854	Fuse, 1.6A, 125V
F891A	23165433	Holder, Fuse
G005	23118859	Diode, 1SS133
G023	24327180	MF, 18 ohm, ±1%, 1/4W
G101	24872101	Chip, 100 ohm, 1/16W
G102	24872101	Chip, 100 ohm, 1/16W
GJ01	24000824	Chip Jumper, 2125Type
GJ05	24000824	Chip Jumper, 2125Type
GJ06	24000824	Chip Jumper, 2125Type
GJ07	24000824	Chip Jumper, 2125Type
GJ31	24000824	Chip Jumper, 2125Type
GJ32	24000824	Chip Jumper, 2125Type
GJ59	24000824	Chip Jumper, 2125Type
GJ77	24000824	Chip Jumper, 2125Type
GJ701	24000824	Chip Jumper, 2125Type
GJ702	24000824	Chip Jumper, 2125Type
GJ705	24000824	Chip Jumper, 2125Type
GR01	24000824	Chip Jumper, 2125Type (50A60/55A60/61A60)
GR02	24000824	Chip Jumper, 2125Type
H003	23344421	RF Switch, RSU133X6
H003A	23740989	Nut, F-Connector
K912A	23101988	Battery, LR6G R SP-2A (50A60/55A60/61A60)
K912A	23101998	Battery, R6KGT SP-2T (50A50)

Location No.	Part No.	Description
KB11	23904946	Remote Sensor, RPM-676CBR-S
P002	23365089	F Connector(50A50)
P701	23367724	Plug, B-B,15P
P702	23367724	Plug, B-B,15P
P708	23902655	Socket, B-B, 15P
P709	23902655	Socket, B-B, 15P
P713	23164787	Plug, 7P
P714	23164787	Plug, 7P
P715	23164787	Plug, 7P
P801	23372117	Power Cord
PV02	23365819	Jack, 1S3P
PV06	23903040	Socket, 56P
PZ01	23368130	Plug, B-B,10P
PZ02	23902213	Socket, B-B, 10P
S602	23145412	Switch, Slide, 2C2P
SA01	23145226	Switch, Push, 1C1P
SA02	23145226	Switch, Push, 1C1P
SA03	23145226	Switch, Push, 1C1P
SA04	23145226	Switch, Push, 1C1P
SA05	23145226	Switch, Push, 1C1P
SA06	23145226	Switch, Push, 1C1P
SA07	23145226	Switch, Push, 1C1P
SA08	23145226	Switch, Push, 1C1P
SA09	23145226	Switch, Push, 1C1P
SR81	23146556	Relay, DC12V
UY01	23148731	Module, MKMP33, MULTI PICTURE PNT
V901A	23902019	Socket, CRT, 9P
V902A	23902019	Socket, CRT, 9P
V903A	23902019	Socket, CRT, 9P
W661	23151232	Speaker, SPK-1235, 160X160mm, 8 ohm
W662	23151232	Speaker, SPK-1235, 160X160mm, 8 ohm
X401	23153721	Ceramic Resonator, 503kHz, TCR1023
X501	23153961	Crystal, 3.58MHz
XA01	23153533	Ceramic Resonator, 8.00MHz, TCR1082AM
Z401	24082996	CR Block, TPA5007BH
Z402	23140203	SG-GAP, SG99B3EN
Z410	23110841	Coil, Forcus, TPA6030
Z410A	23505177	Focus Cable
Z450A	23504953	Anode Cable
Z702	23103823	Filter, TEM2027D
Z703	23103823	Filter, TEM2027D
Z704	23103823	Filter, TEM2027D
Z705	23103823	Filter, TEM2027D
Z706	23103823	Filter, TEM2027D
Z707	23103823	Filter, TEM2027D
Z711	23103823	Filter, TEM2027D
Z712	23103823	Filter, TEM2027D
ZT01	70108925	Resonator, 4MHz, TCR1071

PC BOARD ASSEMBLIES

* E031Z		CRT-D/R Board, PB9454A1 (50A60/55A60/61A60)
* E031Z		CRT-D/R Board, PB9454B1 (50A50)
* E032Z		CRT-D/G Board, PB9454A2 (50A60/55A60/61A60)
* E032Z		CRT-D/G Board, PB9454B2 (50A50)
* E033Z		CRT-D/B Board, PB9454A3 (50A60/55A60/61A60)
* E033Z		CRT-D/B Board, PB9454B3 (50A50)
* E034Z		FRONT-CON Board, PB9454A4 (50A60/55A60/61A60)
* E034Z		FRONT-CON Board, PB9454B4 (50A50)
* E035Z		FRONT-IN Board, PB9454A5 (50A60/55A60/61A60)
* E035Z		FRONT-IN Board, PB9454B5 (50A50)
* E036Z		SVM Board, PB9454A6 (50A60/55A60/61A60)
* E040Z		REM Board, PB9454A10 (50A60/55A60/61A60)
* E040Z		REM Board, PB9454B10 (50A50)
* U701	23784738	DIGI-CONV Board, PB9453A (50A60/50A50)
* U701	23784777	DIGI-CONV Board, PB9453B (55A60)
* U701	23784779	DIGI-CONV Board, PB9453C (61A60)
* U801		DEF/Power Board, PB9451A (50A60/55A60/61A60)
* U801		DEF/Power Board, PB9451B (50A50)
* U901		Signal/CON Board, PB9450A (50A60)
* U901		Signal/CON Board, PB9450B (50A50)
* U901		Signal/CON Board, PB9450C (55A60)
* U901		Signal/CON Board, PB9450D (61A60)
* UV01		A/V Board, PB9452A (50A60/55A60/61A60)
* UV01		A/V Board, PB9452B (50A50)
* UZ01	23784601	DIG COM Board, PB9398

PICTURE TUBE

⚠V901R	23005114	Protector Coupling 50A R (50A60)
⚠V901R	23796001	Projection Tube Ass'y, 50HR (50A50)
⚠V901R	23005242	Protector Coupling 55A R (55A60)
⚠V901R	23005249	Protector Coupling 61A R (61A60)
⚠V902G	23005115	Protector Coupling 50A G (50A60/55A60/61A60)
⚠V902G	23005397	Protector Coupling 50A50 G (50A50)
⚠V903B	23796003	Projection Tube Ass'y, 50HB (50A60/50A50/55A60)
⚠V903B	23796486	Projection Tube Ass'y, 61HB (61A60)

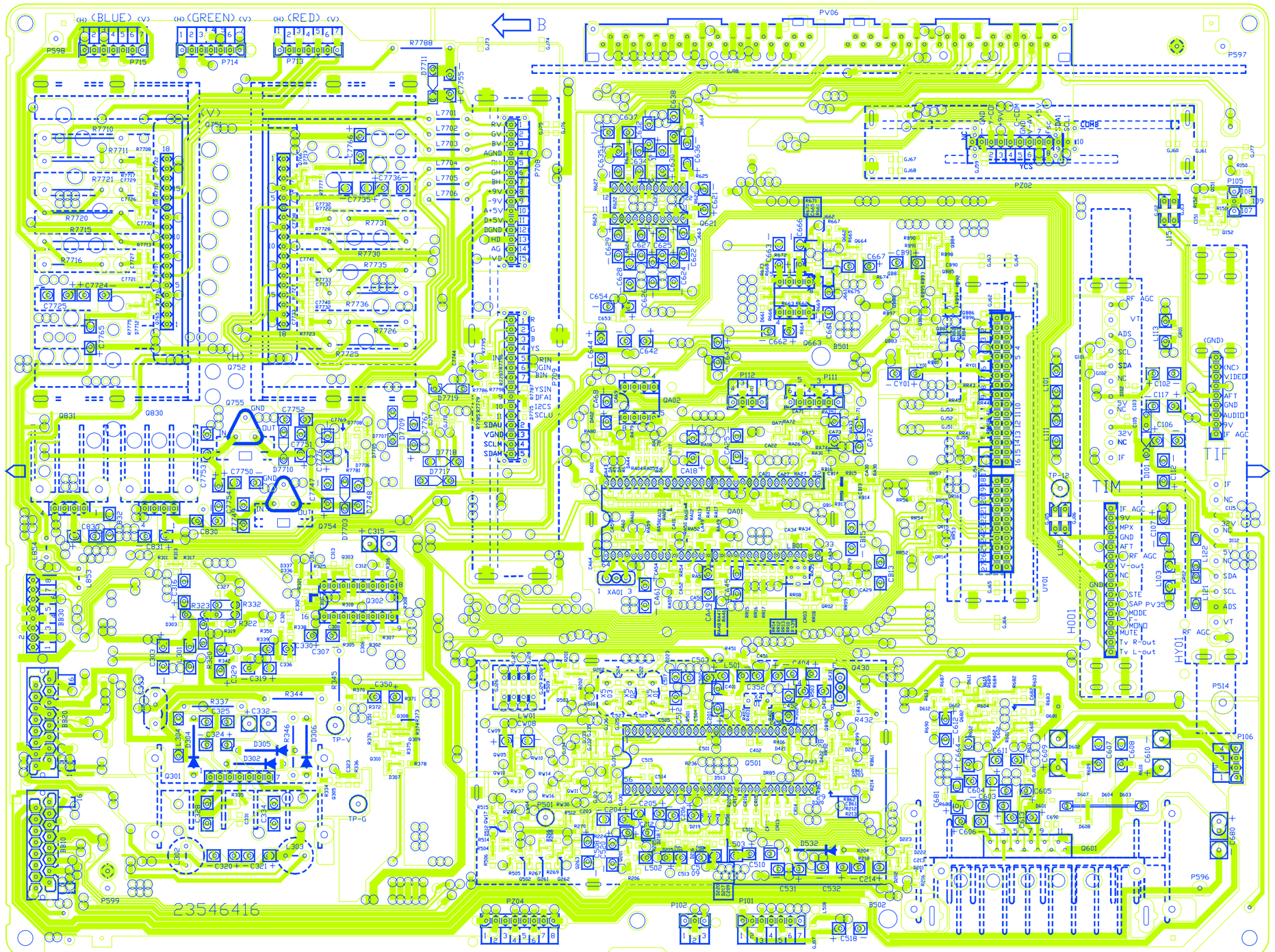
TUNER

H001	23321374	Tuner, EL952LW
HY01	23321369	Tuner, EL953L (50A60/55A60/61A60)

Location No.	Part No.	Description
ACCESSORIES		
K912	23306263	Remote Hand Unit, CT-9946 (50A60/55A60/61A60)
K912	23306359	Remote Hand Unit, CT-90037 (50A50)
AT03	23588181	Battery Cover
Y101	23563913	Owner's Manual, English, 50A60/55A60/61A60
Y101	23563938	Owner's Manual, English, 50A50
Y101F	23563914	Owner's Manual, French, 50A60/55A60/61A60
Y101F	23563939	Owner's Manual, French, 50A50
CABINET PARTS		
A101	23411115	Wood Cabinet (50A60/50A50)
A101	23411138	Wood Cabinet (55A60)
A101	23411141	Wood Cabinet (61A60)
A102	23527067	Speaker Grille R (50A60/50A50/55A60)
A102	23527073	Speaker Grille R (61A60)
A103	23527068	Speaker Grille L (50A60/50A50/55A60)
A103	23527074	Speaker Grille L (61A60)
A126	23445281	Button, Catch Male
A127	23445281	Button, Catch Male
A150	23411114	Light Box (50A60/50A50)
A150	23411137	Light Box (55A60)
A150	23411140	Light Box (61A60)
A160	23469228	Caster
A201	23549258	Bezel (50A60/50A50)
A201	23549323	Bezel (55A60)
A201	23549324	Bezel (61A60)
A202	23450257	Control Panel
A213	23427652	Door
A268	23450101	Front Panel (50A60/50A50/55A60)
A268	23450224	Front Panel (61A60)
A322	23445282	Button, Catch Female
A401	23005351	Back Cover (50A60/50A50)
A401	23005229	Back Cover (55A60)
A401	23005247	Back Cover (61A60)
A424	23540074	Back Cover (50A60/50A50)
A424	23540075	Back Cover (55A60)
A424	23540076	Back Cover (61A60)
A505	72471068	Screw, BIDT2 4X12BZ
A510	23030815	Screw, PTD #6 X 3/4
A518	23030815	Screw, PTD #6 X 3/4
A519	23030815	Screw, PTD #6 X 3/4
A521	23030815	Screw, PTD #6 X 3/4
A533	23030815	Screw, PTD #6 X 3/4
A535	23030815	Screw, PTD #6 X 3/4
A539	23030815	Screw, PTD #6 X 3/4
A541	23030815	Screw, PTD #6 X 3/4
A543	72471068	Screw, BIDT2 4X12BZ
A544	23030815	Screw, PTD #6 X 3/4
A701	23525844	Case(50A60/50A50)
A701	23525845	Case(55A60)
A701	23525846	Case(61A60)
A703	23935847	Packing, Top (50A60/50A50)
A703	23935867	Packing, Top (55A60)
A703	23935868	Packing, Top (61A60)
A708	23935848	Packing, Bottom (50A60/50A50)
A708	23935866	Packing, Bottom (55A60/61A60)
A721	23943628	Cover, Poly
K111	23430111	Delta, 77-A/B Assembly (50A60/50A50/55A60)
K111	23430160	Delta, 79-A/B Assembly (61A60)
K112	23430432	Delta, 78-A/B Assembly (50A60/50A50/55A60/61A60)
K113	23430111	Delta, 77-A/B Assembly (50A60/50A50/55A60)
K113	23430160	Delta, 79-A/B Assembly (61A60)
K501	23430783	Lenti Sheet, SCREEN50KK-L (50A60/50A50)
K501	23430612	Lenti Sheet, SCREEN55DJ-L (55A60)
K501	23837528	Lenti Sheet, SCREEN61DH-L (61A60)
K502	23430784	Fresnel Sheet, SCREEN50KK-F (50A60/50A50)
K502	23430613	Fresnel Sheet, SCREEN55DJ-F (55A60)
K502	23837529	Fresnel Sheet, SCREEN61DH-F (61A60)
K511	23430782	SCREEN50KK (50A60/50A50)
K511	23430611	SCREEN55DJ (55A60)
K511	23837527	SCREEN61DH (61A60)
K601	23430313	Mirror, MIRROR48(E) (50A60/50A50)
K601	23430529	Mirror, MIRROR55H (55A60)
K601	23430528	Mirror, MIRROR61H (61A60)

SIGNAL/CON BOARD PB9450

BOTTOM (FOIL) SIDE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DEF/POWER BOARD PB9451

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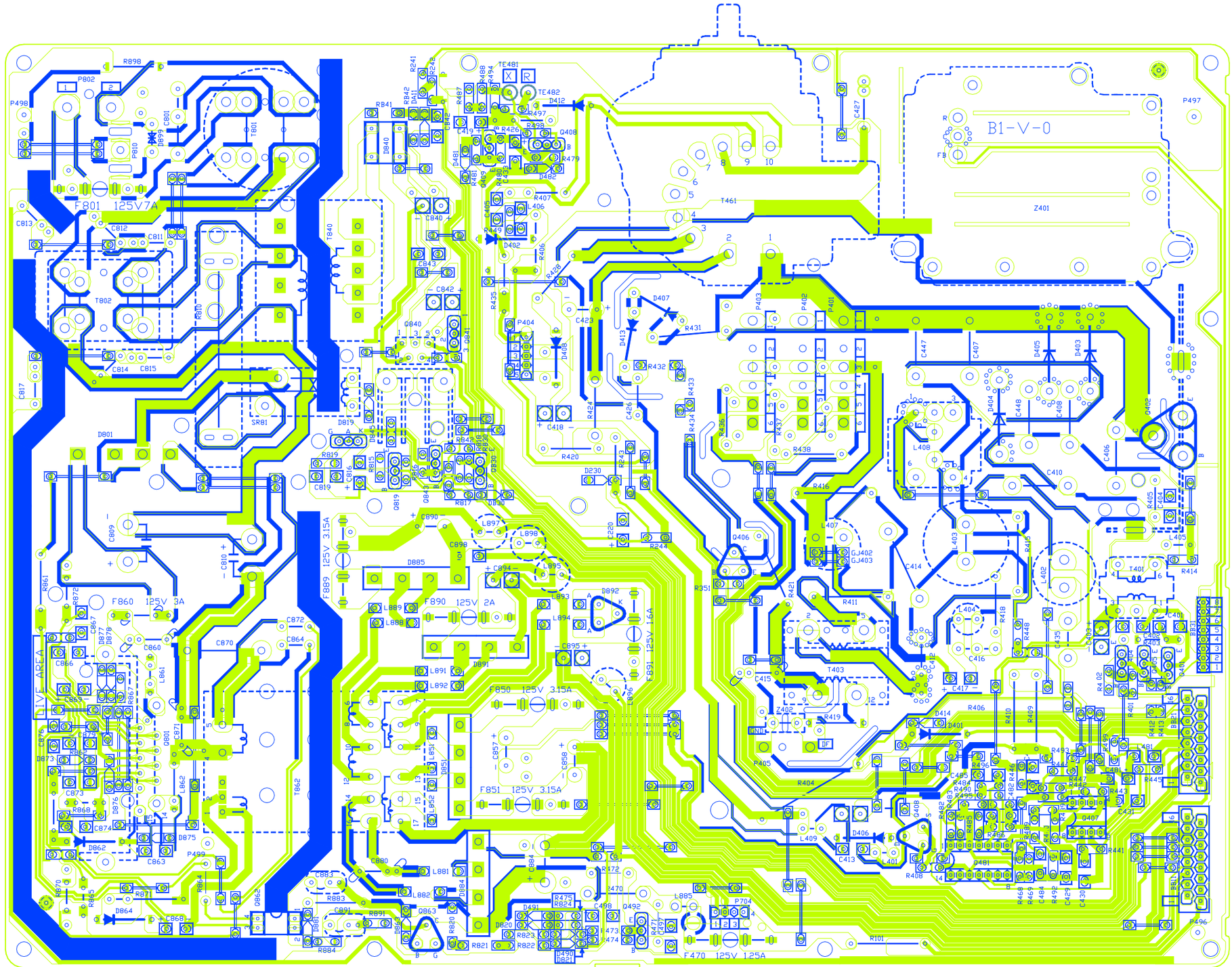
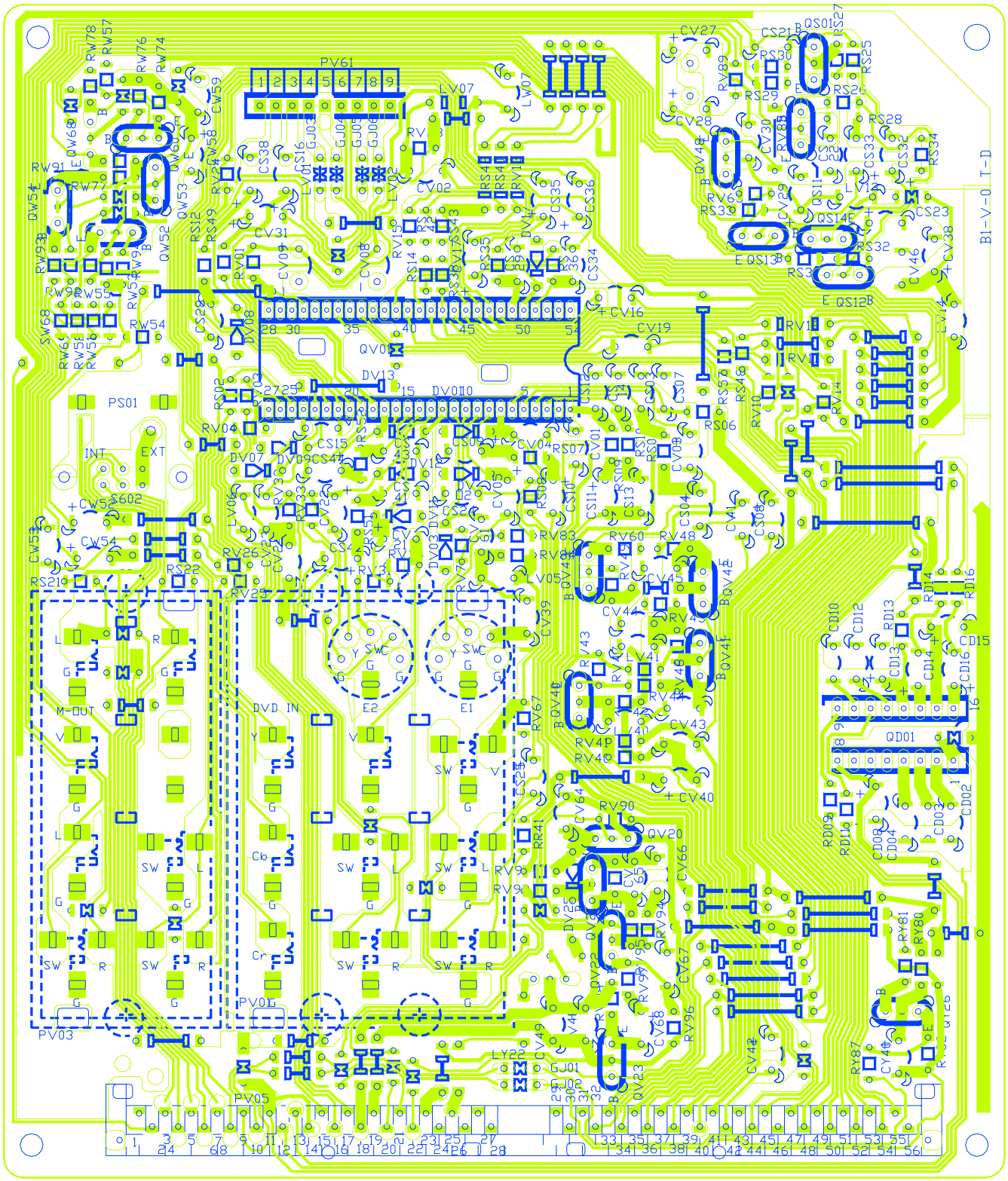


BACK/AV BOARD PB9452

BOTTOM (FOIL) SIDE



DIGI-CONV BOARD PB9453

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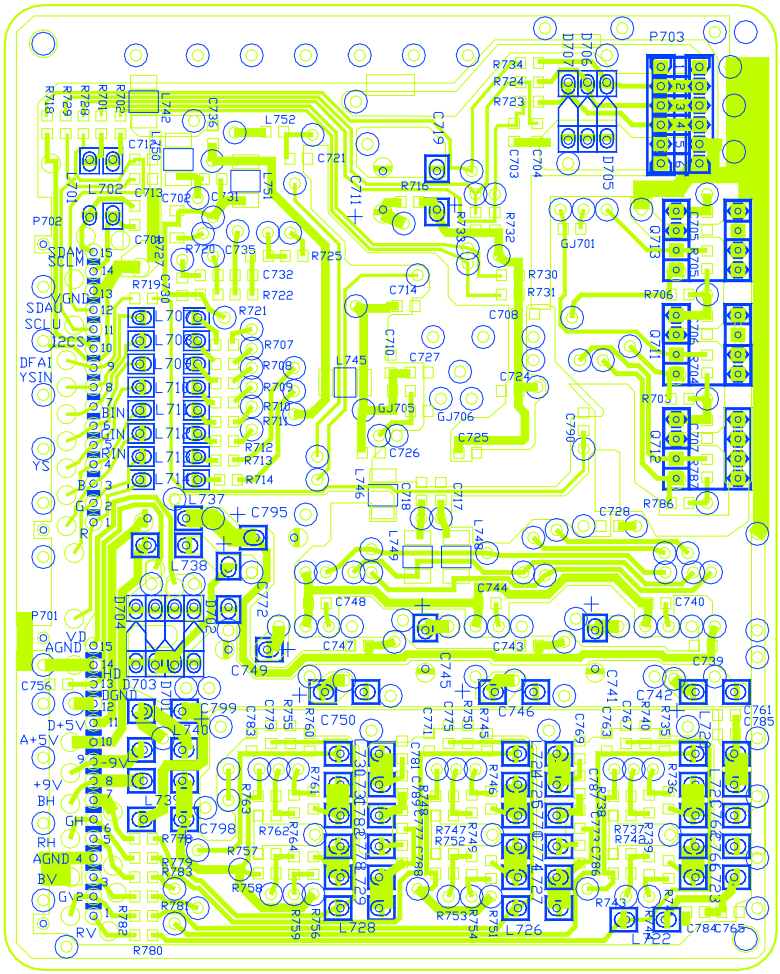

DIGI-COMB BOARD PB9398

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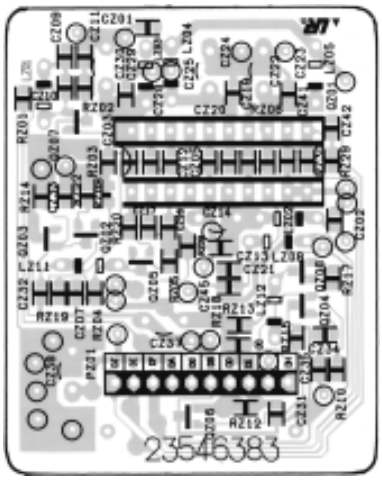

R-DRIVE BOARD PB9454-1

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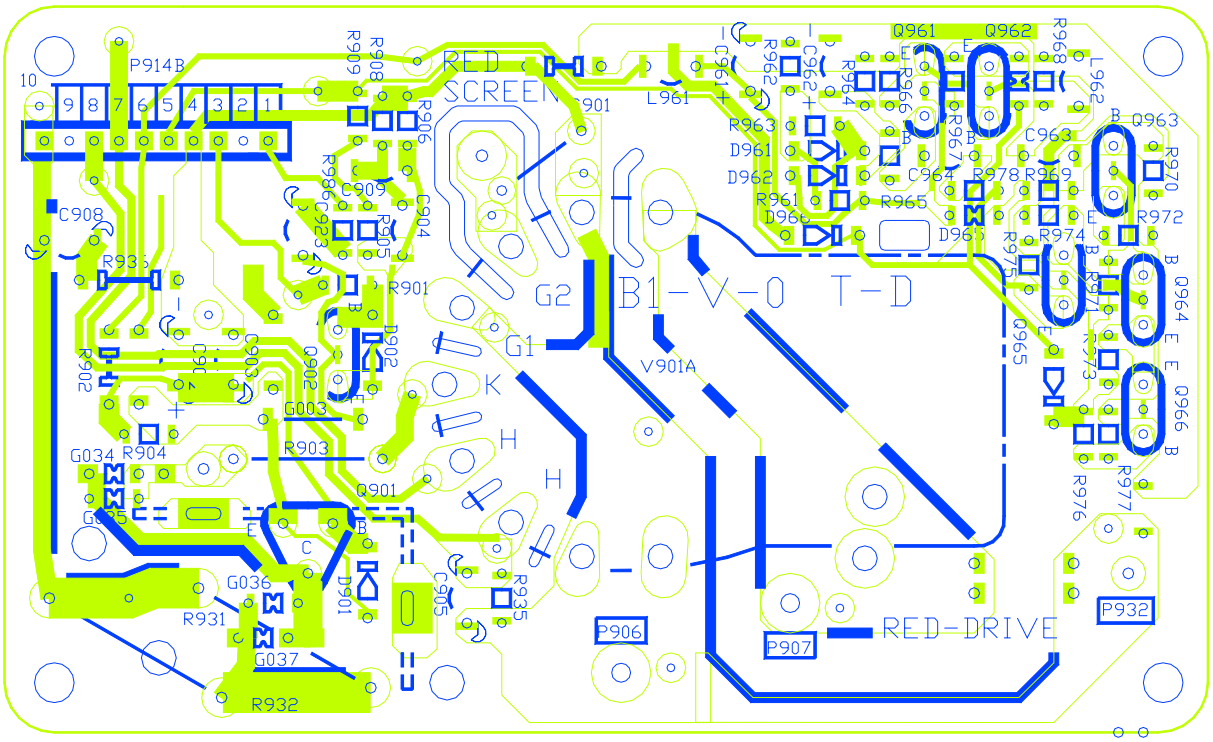

B-DRIVE BOARD PB9454-3

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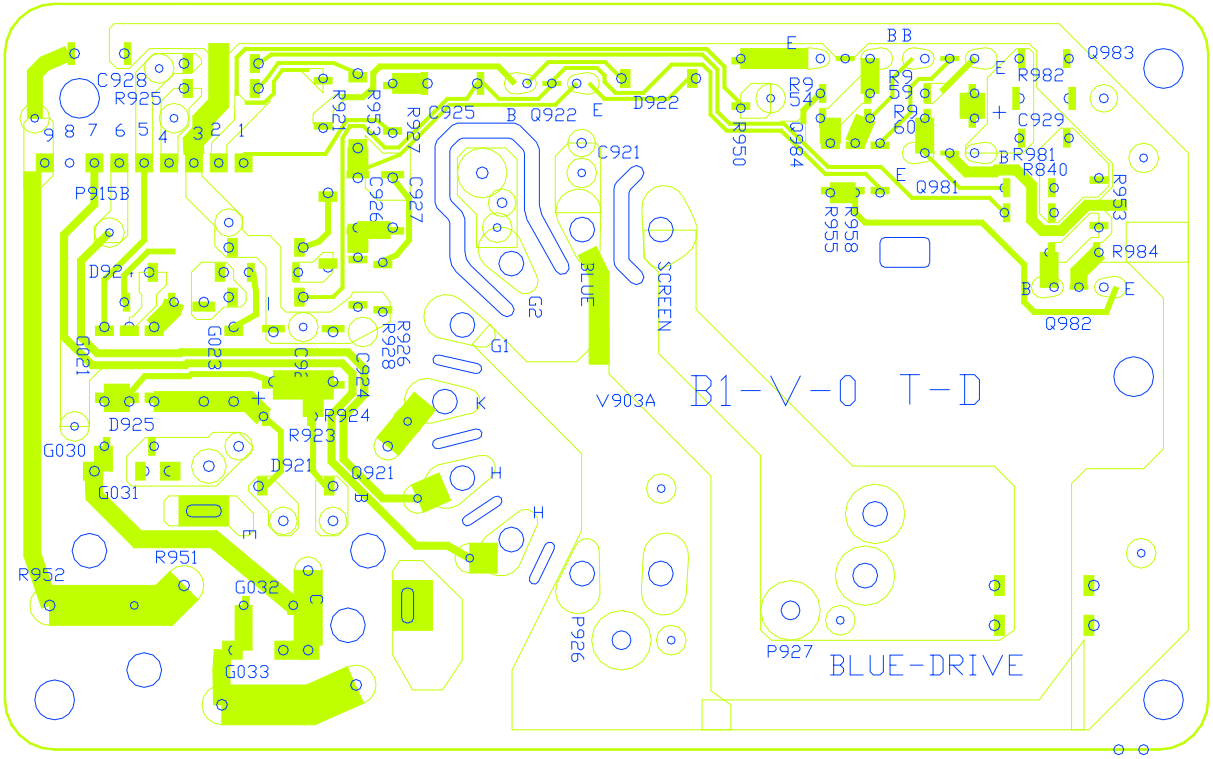

B-DRIVE BOARD PB9454-2

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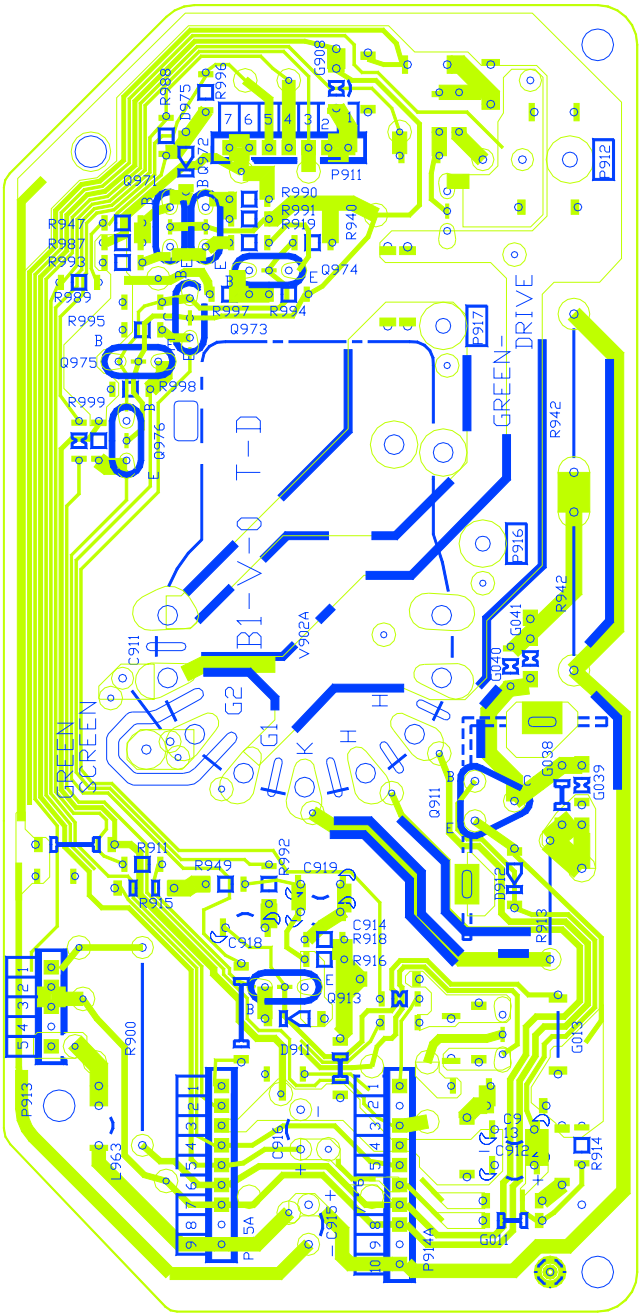

FRONT-CONT BOARD PB9454-4

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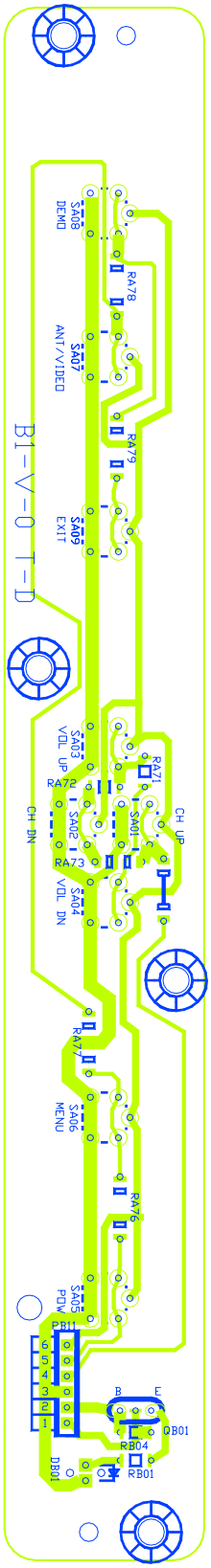

FRONT-CONV BOARD PB9454-5

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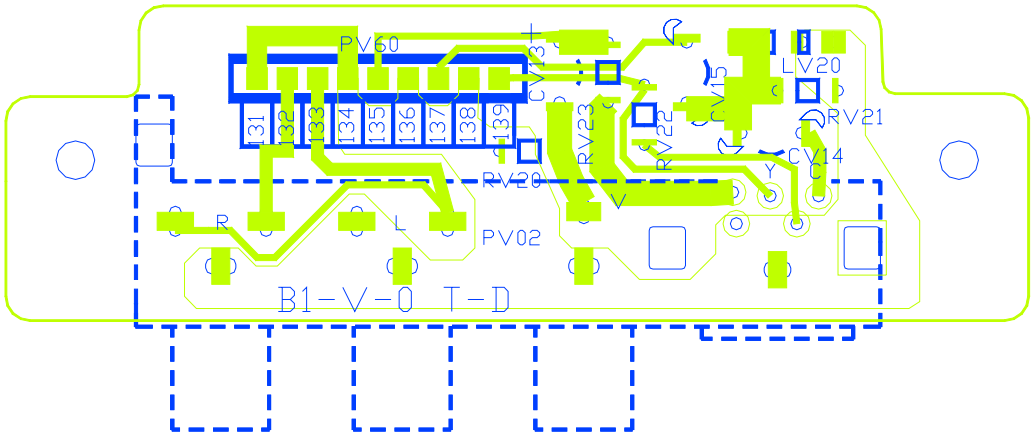
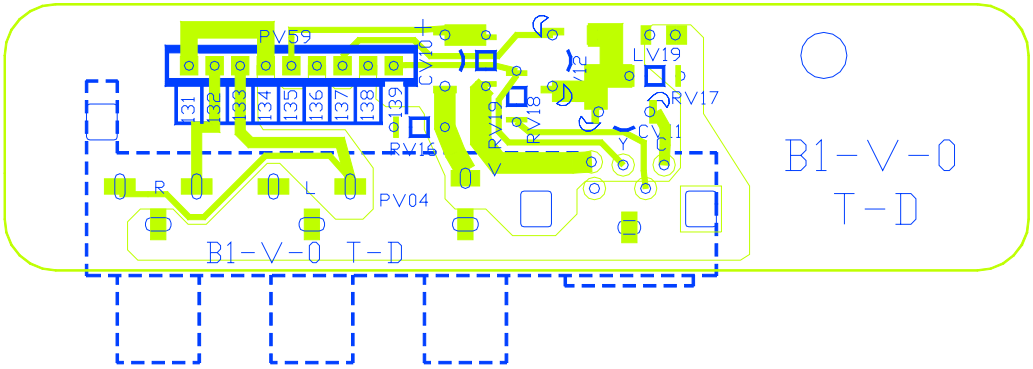


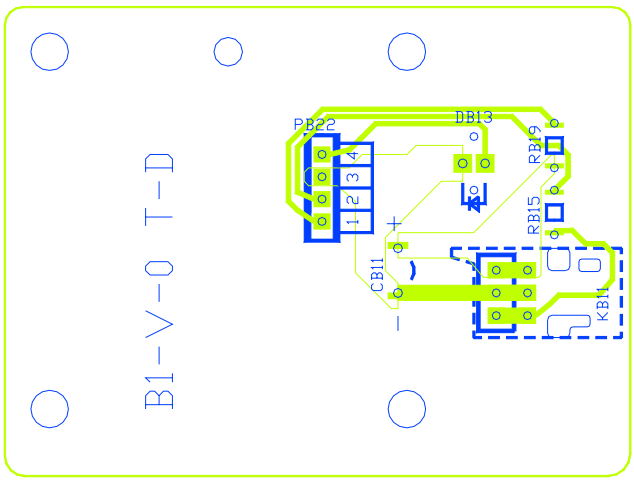
FRONT-IN BOARD PB9454-9

BOTTOM (FOIL) SIDE



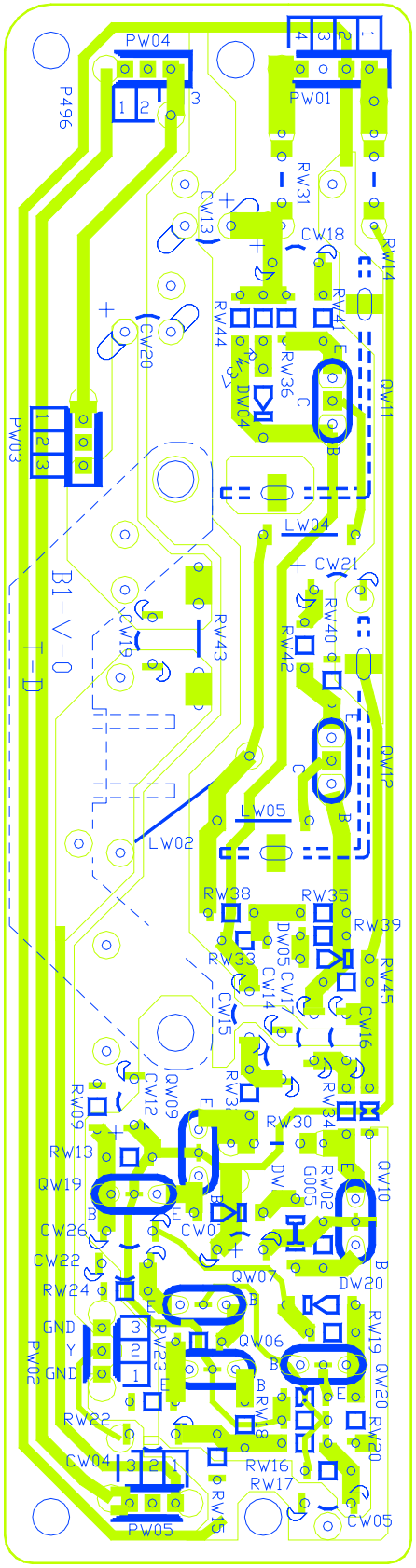
REM BOARD PB9454-10

BOTTOM (FOIL) SIDE



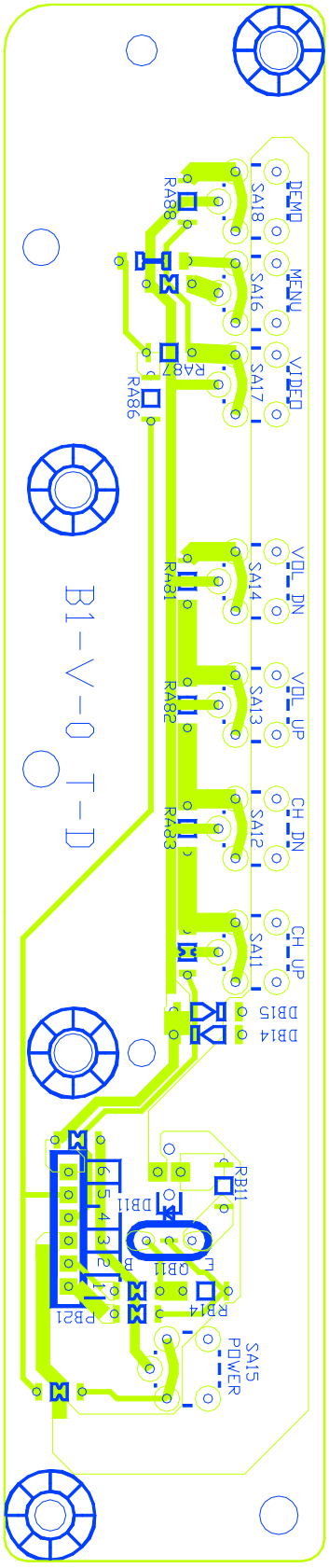
SVM BOARD PB9454-6

BOTTOM (FOIL) SIDE



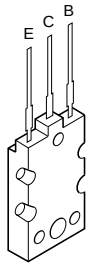
FRONT-CON BOARD PB9454-8

BOTTOM (FOIL) SIDE

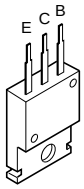


TERMINAL VIEW OF TRANSISTORS

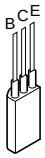
① 2SD2253
(old)
2SC5243



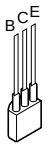
② 2SC3852
2SD1763A
2SC1569
2SC4544
2SA1788
2SA1306
2SA1186A



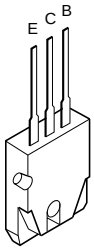
③ 2SC752GTM
2SC2482
2SC2655
2SC4721P



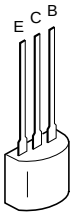
④ 2SC752
2SA562TM
2SA1015
2SC1815
2SC2878
2SC1740S
2SC2120
2SA9335



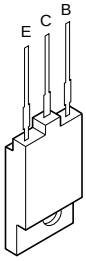
⑤ 2SA1788



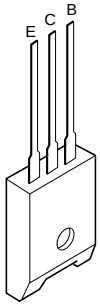
⑥ RN2203
RN2201
RN2004
RN1203
RN1204
RN2204
RN1205
RN1202
RN1201



⑦ 2SD1554
2SD2253
2SD1556
2SD2553
2SC5143



⑧ ON4409



MEMO

SPECIFICATIONS (Representative: 50A60)

TELEVISION SYSTEM	NTSC standard
CHANNEL COVERAGE	VHF: 2 through 13 UHF: 14 through 69 Cable TV: Mid band (A-8 through A-1, A through I) Super band (J through W) Hyper band (AA through ZZ, AAA, BBB) Ultra band (65 through 94, 100 through 125)
POWER SOURCE	120 V AC, 60 Hz
POWER CONSUMPTION	137W
AUDIO POWER	14 W + 14 W
SPEAKER TYPE	Two 6-1/4 inches (16 cm) round
VIDEO/AUDIO TERMINALS	S-VIDEO INPUT Y-INPUT: 1V (p-p), 75 ohm, negative sync. C-INPUT: 0.286 V(p-p) (burst signal), 75 ohm VIDEO/AUDIO INPUT VIDEO: 1 V(p-p), 75 ohm, negative sync. AUDIO: 150 mV(rms) (30% modulation equivalent, 47 kohm) ColorStream™ (Color Difference) VIDEO, AUDIO INPUT Y-INPUT: 1 V(p-p), 75 ohm Cr-INPUT: 0.7 V(p-p), 75 ohm Cb-INPUT: 0.7 V(p-p), 75 ohm AUDIO: 150mV(rms). 47 kohm VIDEO/AUDIO OUTPUT VIDEO: 1 V(p-p), 75 ohm, negative sync. AUDIO: 150 mV(rms) (30% modulation equivalent, 4.7 kohm) VARIABLE AUDIO OUTPUT 0-300 mV(rms) (30% modulation equivalent, 4.7 kohm) AUDIO CENTER CHANNEL INPUT 300 mV(rms) (30% modulation equivalent, 10 kohm)
DIMENSIONS/MASS	

	Dimension (W/H/D)	Mass
50A60	42-1/4 x 50-5/8 x 20-13/16 inches (1,073 x 1,284 x 529 mm)	217 lbs (98.6 kg)

SUPPLIED ACCESSORIES	Remote Control with 2 size “AA” alkaline batteries

*Please refer to owner's manual in detail.

TOSHIBA CORPORATION
1-1, SHIBAURA 1-CHOME, MINATO-KU, TOKYO 105-8001, JAPAN

SCHEMATIC DIAGRAM

MODEL :	**50A60**	**Chassis No. TAC0050**
	50A50	**Chassis No. TAC0051**
	55A60	**Chassis No. TAC0052**
	61A60	**Chassis No. TAC0053**

WARNING: BEFORE SERVICING THIS CHASSIS, READ THE "X-RAY RADIATION PRECAUTION", "SAFETY PRECAUTION" AND "PRODUCT SAFETY NOTICE" ON THE MANUAL FOR THIS MODEL.

CAUTION: The international hazard symbols "⚠" in the schematic diagram and the parts list designate components which have special characteristics important for safety and should be replaced only with types identical to those in the original circuit or specified in the parts list. The mounting position of replacements is to be identical with originals. Before replacing any of these components, read carefully the PRODUCT SAFETY NOTICE on the MANUAL for this model. Do not degrade the safety of the receiver through improper servicing.

NOTE:

1. RESISTOR Resistance is shown in ohm [K = 1.000, M = 1.000.000]. All resistors are 1/6W and 5% tolerance carbon resistor, unless otherwise noted as the following marks.
   1/2R = Metal or Metal oxide of 1/2 watt 1/2S = Carbon compsistion of 1/2 watt
   1RF = Fuse resistor of 1 watt 10W = Cement of 10 watt
   K = ±10% G = ±2% F = ±1%
2. CAPACITOR Unless otherwise noted in schematic, all capacitor values less than 1 are expressed in μF, and the values more than 1 in pF.
   All capacitors are ceramic 50V, unless otherwise noted as the following marks.
   Electolytic capacitor Mylar capacitor
3. The parts indicated with " ⚠ " have special characteristics, and should be replaced with identical parts only.
4. Voltages read with DIGITAL MULTI-METER from point indicated to chassing ground, using a color bar signal with all controls at normal, line voltage 120 volts.
5. Waveforms are taken receiving color bar signal with enough sensitivity.
6. Voltage reading shown are nominal values and may vary ±20% except H.V.

SCHEMATIC DIAGRAM

MODEL : **50A60** Chassis No. TAC0050 **50A50** Chassis No. TAC0051
55A60 Chassis No. TAC0052 **61A60** Chassis No. TAC0053

WARNING: BEFORE SERVICING THIS CHASSIS, READ THE "X-RAY RADIATION PRECAUTION", "SAFETY PRECAUTION" AND "PRODUCT SAFETY NOTICE" ON THE MANUAL FOR THIS MODEL.

CAUTION: The international hazard symbols "⚠" in the schematic diagram and the parts list designate components which have special characteristics important for safety and should be replaced only with types identical to those in the original circuit or specified in the parts list. The mounting position of replacements is to be identical with originals. Before replacing any of these components, read carefully the PRODUCT SAFETY NOTICE on the MANUAL for this model. Do not degrade the safety of the receiver through improper servicing.

NOTE:

1. RESISTOR Resistance is shown in ohm [K = 1.000, M = 1.000.000]. All resistors are 1/6W and 5% tolerance carbon resistor, unless otherwise noted as the following marks.
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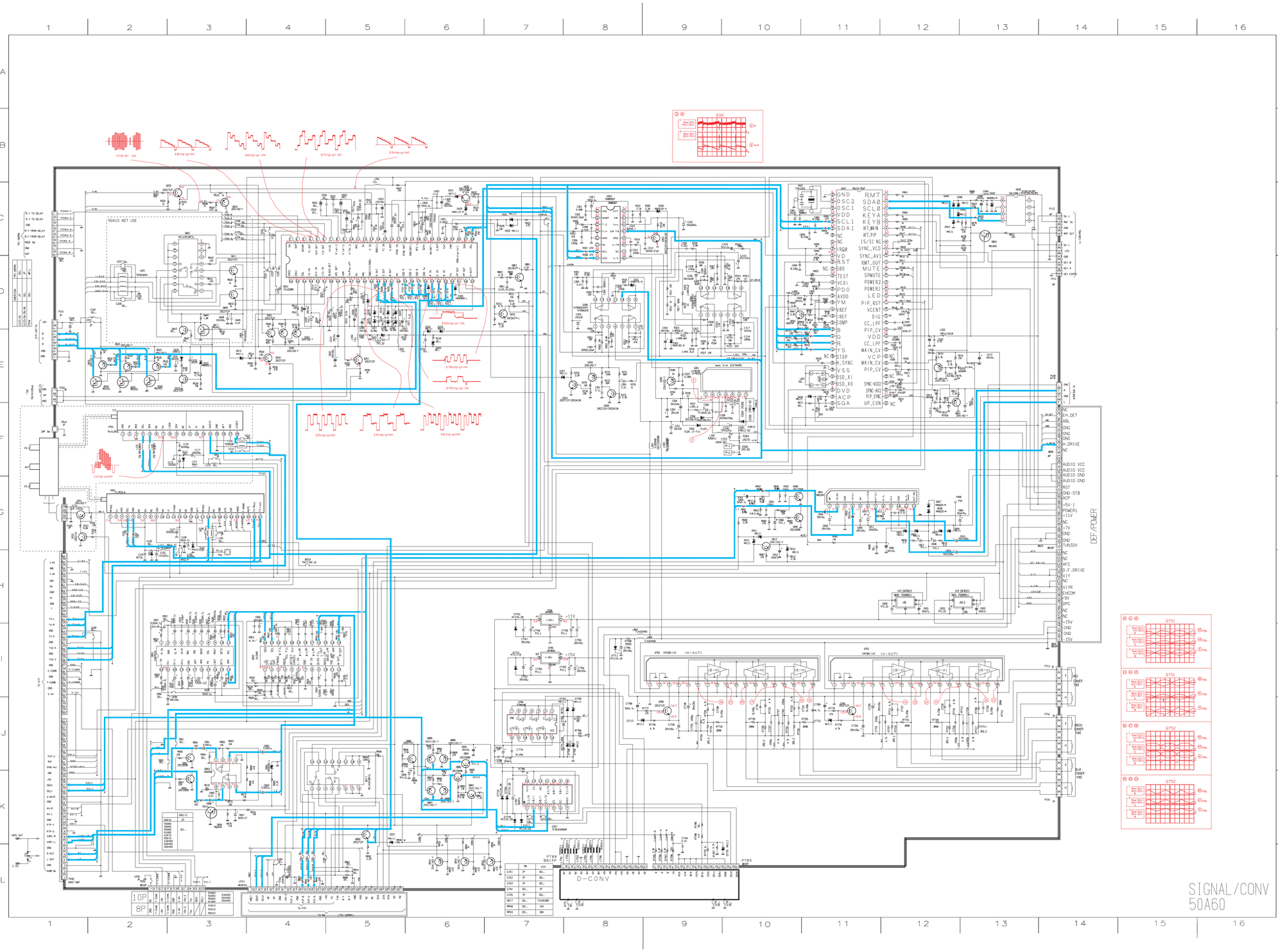
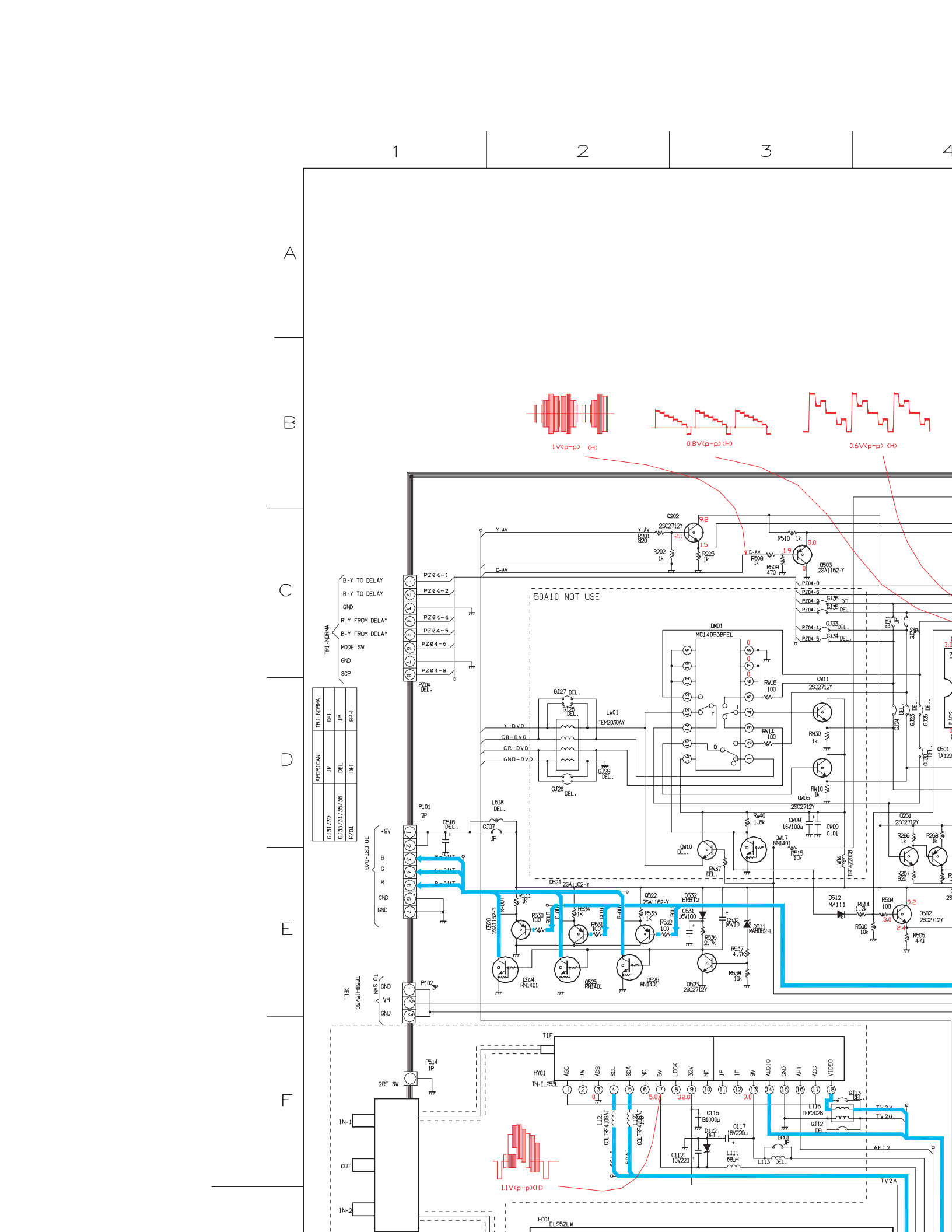
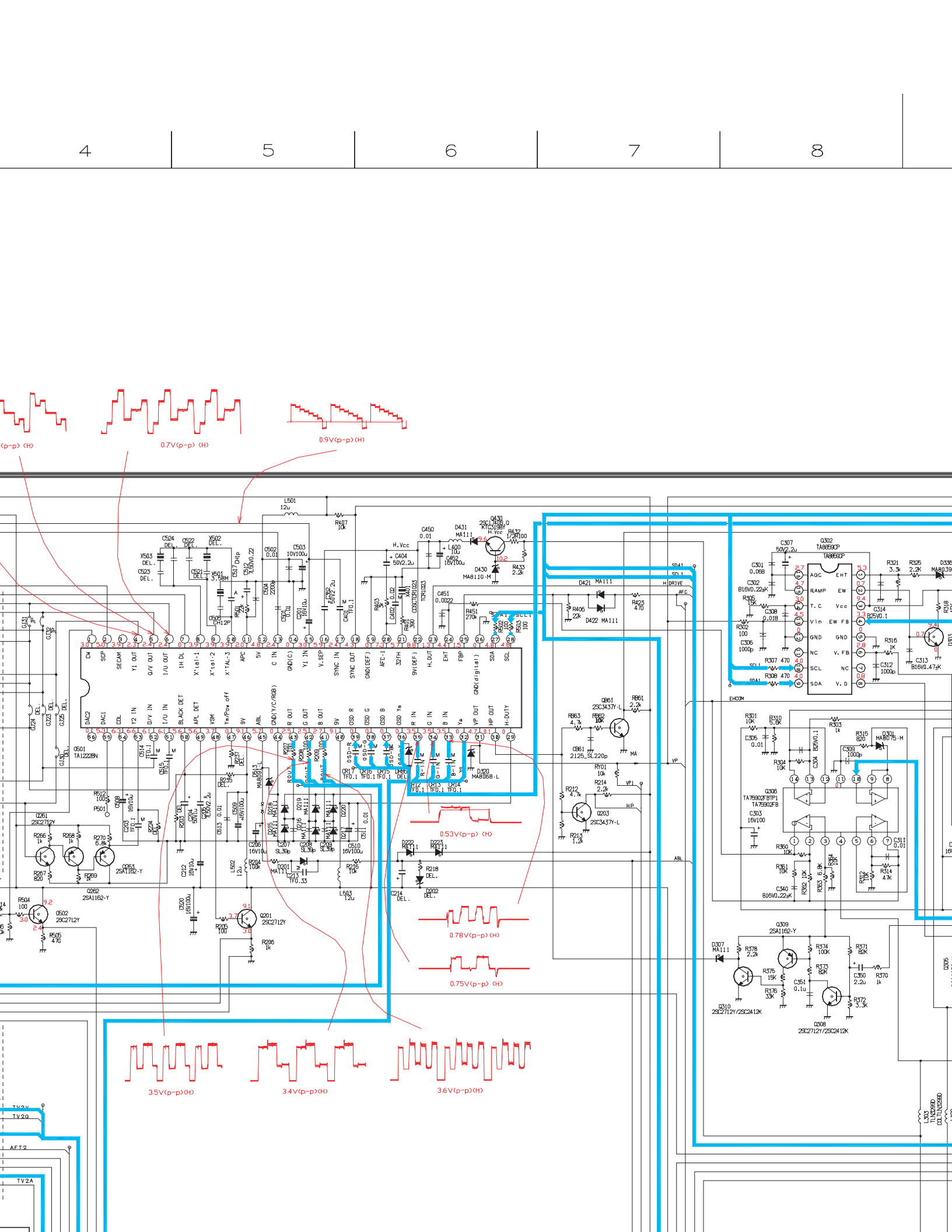
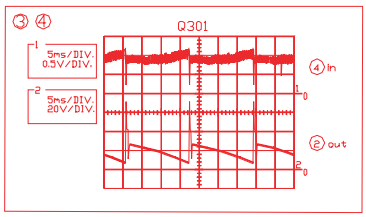
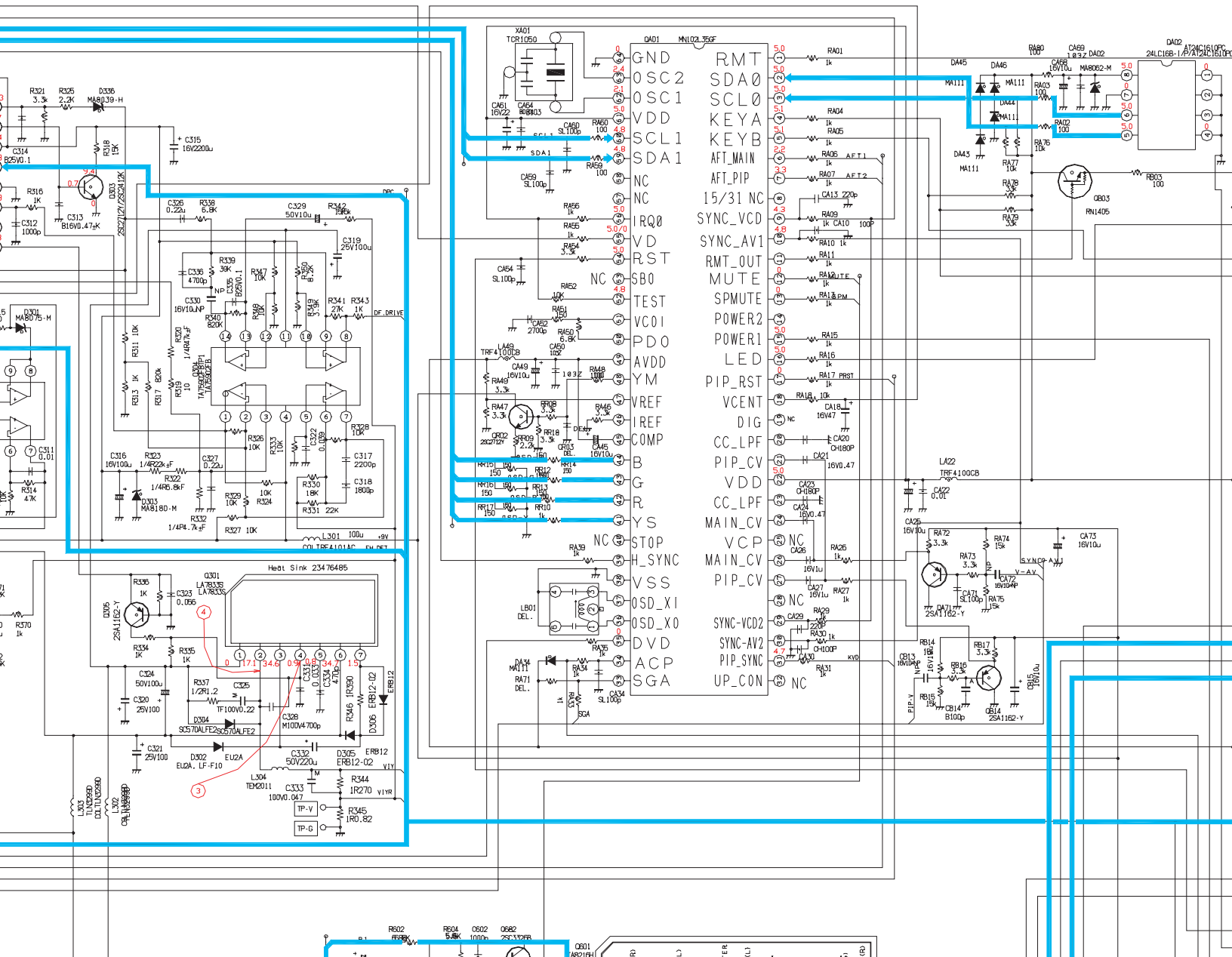
   1RF = Fuse resistor of 1 watt 10W = Cement of 10 watt
   K = ±10% G = ±2% F = ±1%
2. CAPACITOR Unless otherwise noted in schematic, all capacitor values less than 1 are expressed in μF, and the values more than 1 in pF.
   All capacitors are ceramic 50V, unless otherwise noted as the following marks.
   —||— Electolytic capacitor —‖— Mylar capacitor
3. The parts indicated with " ⚠ " have special characteristics, and should be replaced with identical parts only.
4. Voltages read with DIGITAL MULTI-METER from point indicated to chassing ground, using a color bar signal with all controls at normal, line voltage 120 volts.
5. Waveforms are taken receiving color bar signal with enough sensitivity.
6. Voltage reading shown are nominal values and may vary ±20% except H.V.

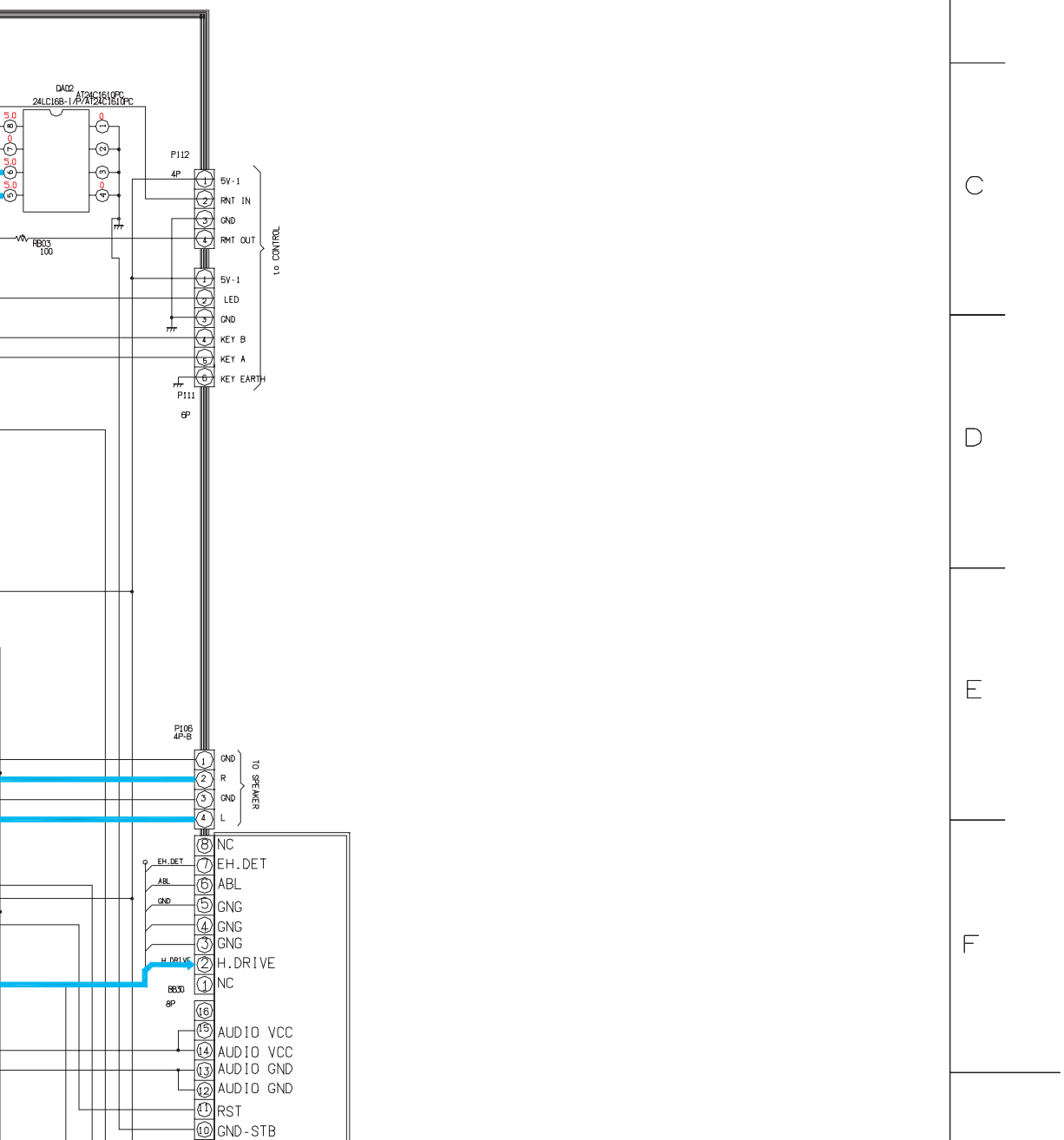


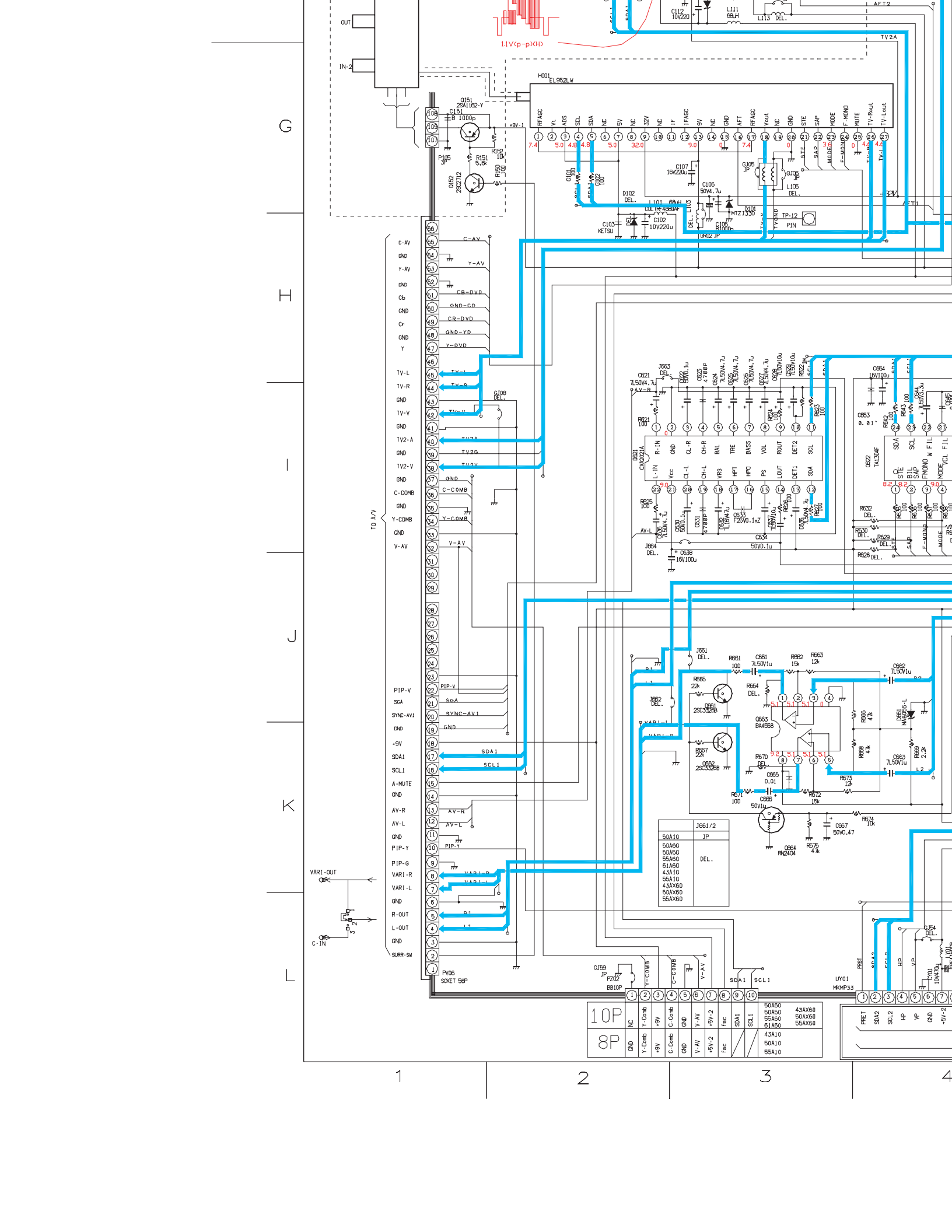

1
2
3
4
A
B
C
D
E
F
1V(p-p) (H)
0.8V(p-p)(H)
0.6V(p-p) (H)
50A10 NOT USE
TRI-NORMA
B-Y TO DELAY
R-Y TO DELAY
GND
R-Y FROM DELAY
B-Y FROM DELAY
MODE SW
GND
SCP
PZ04
PZ04 DEL.
AMERICAN
TRI-NORMA
GJ31/32
GJ33/34/35/36
PZ04
DEL.
JP
8P-L
TO CRT G/D
+9V
B
G
R
GND
GND
P101
7P
TO VM
GND
VM
GND
P102
3P
TP5H15.9S
2RF SW
IN-1
OUT
IN-2
P514
1P
TIF
HY01
TN-EL953L
AGC
TW
ADS
SCL
SDA
NC
5V
LOCK
32V
NC
IF
IF
5V
AUDIO
GND
AFT
AGC
VIDEO
1.1V(p-p)(H)
H001
EL952LW
Y-AV
C-AV
Y-DVD
CB-DVD
CR-DVD
GND-DVD
Q202
2SC2712Y
Q503
2SA1162-Y
DW01
MC14053BFEL
LW01
TEM2030AY
DW11
2SC2712Y
DW05
2SC2712Y
DW17
RN1401
LW04
TRF422CB
Q501
TA122
Q251
2SC2712Y
Q502
2SC2712Y
Q521
2SA1162-Y
Q522
2SA1162-Y
Q532
ERB12
Q620
2SA1162-Y
Q524
RN1401
Q525
RN1201
Q526
RN1401
Q523
2SC2712Y
D512
MA111
D531
MA8082-L
L518
DEL.
C518
DEL.
GJ07
JP
C115
B1000p
C117
16V220u
C112
10V220
D112
DEL.
L111
68uH
L113
DEL.
L115
TEM2028
GJ12
DEL
GJ13
DEL.
GW01
JP
AFT2
TV2A
TV2V
TV2G

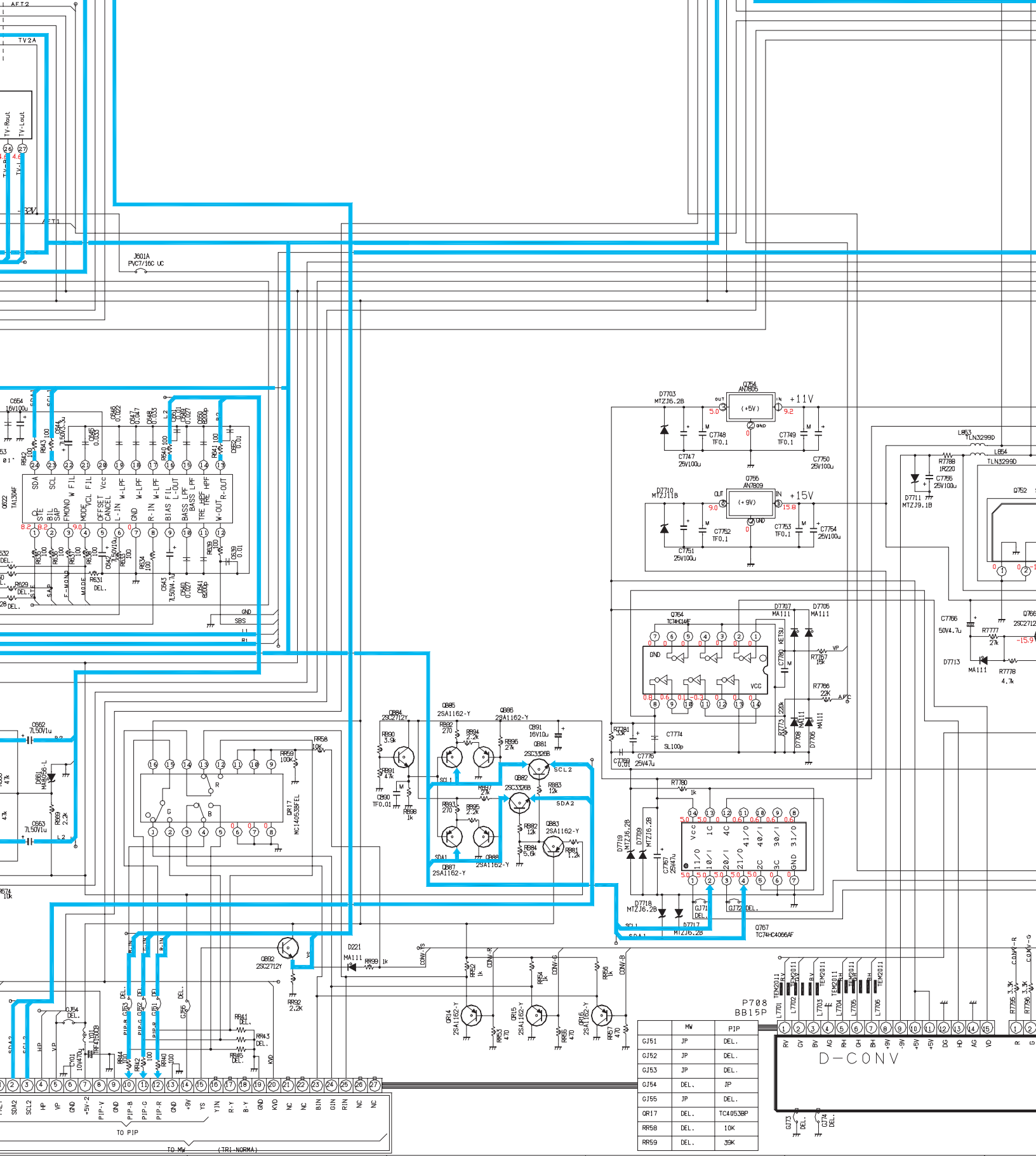

4
5
6
7
8
0.9V(p-p)(H)
0.7V(p-p)(H)
0.53V(p-p)(H)
0.78V(p-p)(H)
0.75V(p-p)(H)
3.5V(p-p)(H)
3.4V(p-p)(H)
3.6V(p-p)(H)


③ ④
Q301
5ms/DIV.
0.5V/DIV.
5ms/DIV.
20V/DIV.
④ in
② out

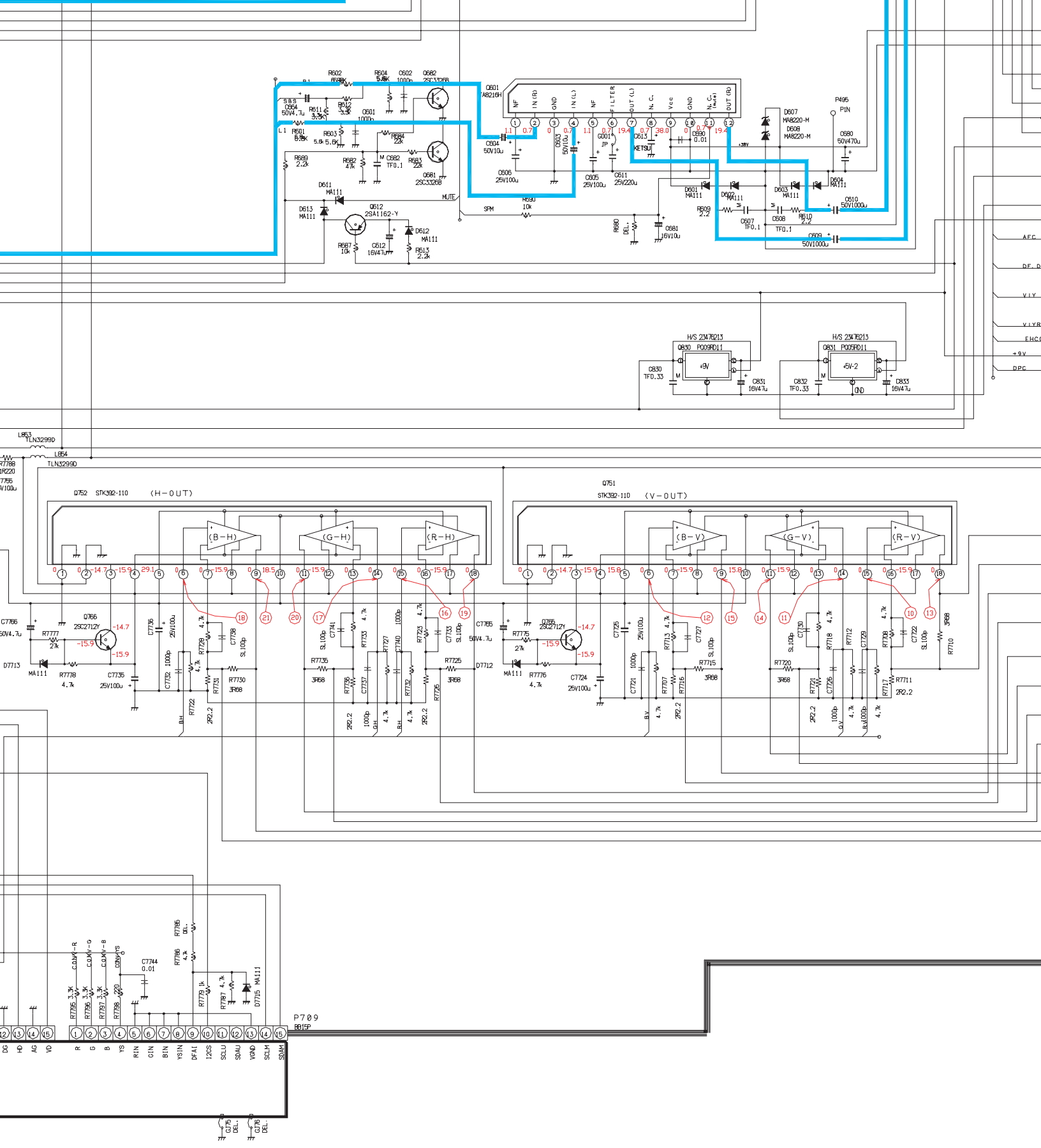

XA01
TCR1050
DA01
MN102L35GF
GND
OSC2
OSC1
VDD
SCL1
SDA1
NC
NC
IRQ0
VD
RST
SB0
TEST
VCOI
PDO
AVDD
YM
VREF
IREF
COMP
B
G
R
YS
NC
STOP
H_SYNC
VSS
OSD_XI
OSD_XO
DVD
ACP
SGA
RMT
SDA0
SCL0
KEYA
KEYB
AFT_MAIN
AFT_PIP
15/31 NC
SYNC_VCD
SYNC_AV1
RMT_OUT
MUTE
SPMUTE
POWER2
POWER1
LED
PIP_RST
VCENT
DIG
CC_LPF
PIP_CV
VDD
CC_LPF
MAIN_CV
VCP
MAIN_CV
PIP_CV
NC
SYNC-VCD2
SYNC-AV2
PIP_SYNC
UP_CON
DA02
AT24C1610PC
24LC16B-I/P/AT24C1610PC
Heat Sink 23476485
Q301
LA7833S
LA7833S
L301 100u +9V
COLTRE4101AC
TP-V
TP-G
R602
R604
C602
Q602
2SC3326
Q601
AR216H


13
14
15
16
A
B
C
D
E
F
DA02
AT24C16L0PC
24LC16B-I/P/AT24C16L0PC
P112
4P
5V-1
RMT IN
GND
RMT OUT
RB03
100
5V-1
LED
GND
KEY B
KEY A
KEY EARTH
P111
6P
TO CONTROL
P106
4P-B
GND
R
GND
L
TO SPEAKER
NC
EH.DET
ABL
GND
GND
GND
H.DRIVE
NC
8P
AUDIO VCC
AUDIO VCC
AUDIO GND
AUDIO GND
RST
GND-STB

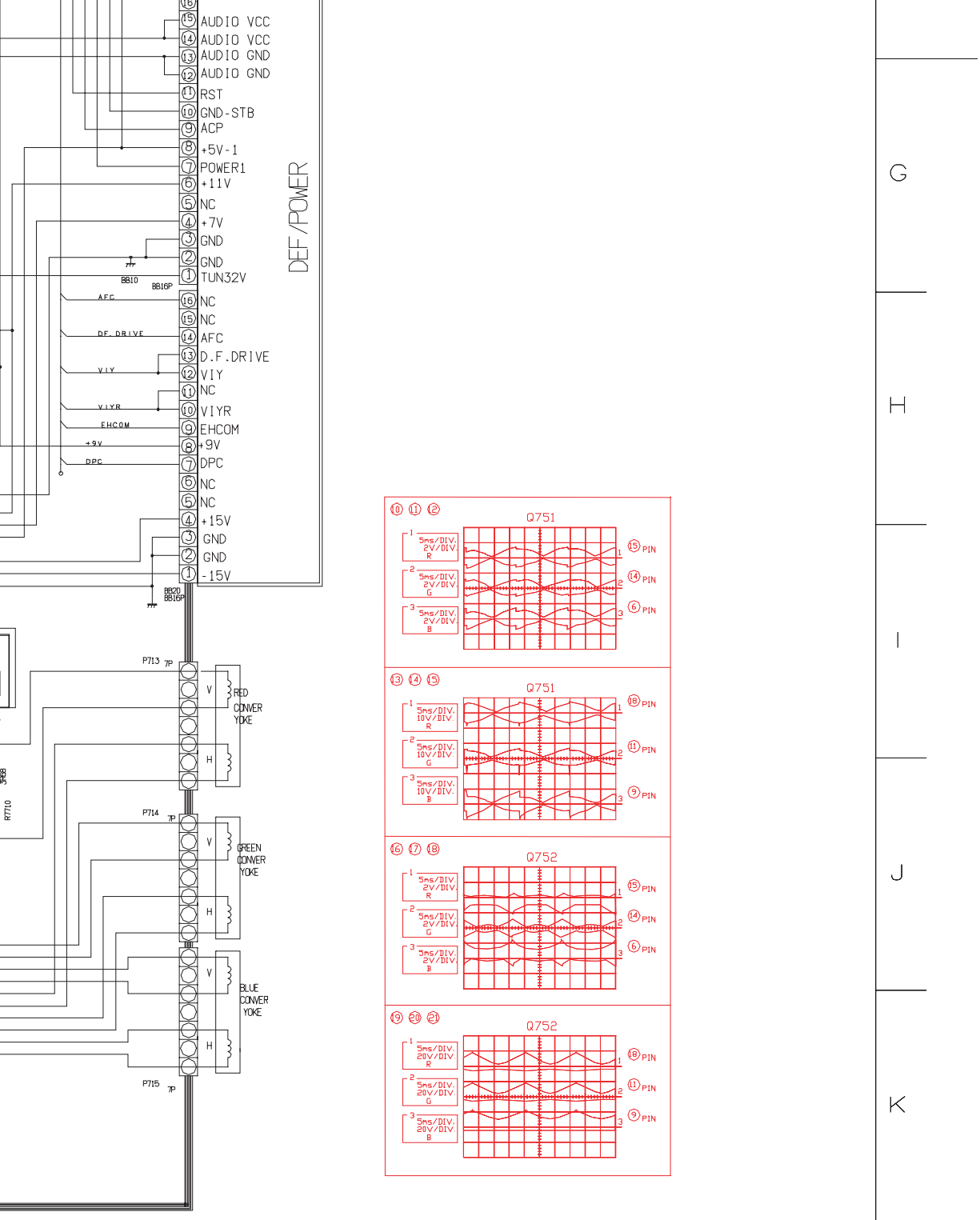

TV2A
AFT2
IN-2
1.1V(p-p)(H)
H001 EL952LV
RFAGC Vt ADS SCL SDA NC 5V NC 32V NC IF IFAGC 9V NC GND AFT RFAGC Vout NC GND STE SAP MODE F-MONO MUTE TV-Rout TV-Lout
Q151 2SA1162-Y
Q152 2SC2712
C151 B 1000p
R151 5.6k
R152 10k
R150 100
P105
+9V-1
C107 16V220u
C106 50V4.7u
D101 MTZJ33D
D102 DEL.
L101 68uH
L105 DEL.
GJ05 JP
GJ06 JP
C102 10V220u
C103 KETSU
TP-12 PIN
GND2 JP
TO A/V
C-AV
Y-AV
CB-DVD
GND-CD
CR-DVD
GND-YD
Y-DVD
TV-L
TV-R
TV-V
TV2-A
TV2-G
TV2-V
C-COMB
Y-COMB
V-AV
PIP-V
SGA
SYNC-AV1
+9V
SDA1
SCL1
A-MUTE
AV-R
AV-L
PIP-Y
PIP-G
VARI-R
VARI-L
R-OUT
L-OUT
SURR-SW
PV06 SOCKET 56P
VARI-OUT
C-IN
J663 DEL.
C621 7.5DV4.7u AV-R
C622 7.5DV4.7u
C623 50V0.1u
C624 7.5DV4.7u
C625 7.5DV4.7u
C626 7.5DV4.7u
C627 7.5DV4.7u
C628 7.5DV10u
C629 7.5DV10u
R622 1M
R623 100
R621 100
IC621 CXA2021A
IC622 TA1304F
R-IN GND CL-R CH-R BAL TRE BASS VOL ROUT DET2 SCL
L-IN Vcc CL-L CH-L VRS HPT HPD PS LOUT DET1 SDA
C630 50V0.1u
C631 4700P
C632 7.5DV4.7u
C633 25V0.1+Z
C634 50V0.1u
C635 7.5DV4.7u
C636 7.5DV4.7u
C637 16V100u
C638 16V100u
R625 100
R626 DEL.
R627 100
R628 100
R629 DEL.
R630 DEL.
R631 100
R632 DEL.
C654 16V100u
C655 7.5DV4.7u
C656 7.5DV4.7u
C657 7.5DV4.7u
C658 7.5DV4.7u
C659 7.5DV4.7u
C660 7.5DV4.7u
R641 100
R642 100
R643 100
R644 100
R645 100
R646 100
R647 100
R648 100
R649 100
R650 100
R651 100
R652 100
R653 100
R654 100
R655 100
R656 100
C661 7.5DV1u
C662 7.5DV1u
C663 7.5DV1u
C664 7.5DV1u
C665 0.01
C666 50V1u
C667 50V0.47
R661 100
R662 15k
R663 12k
R664 DEL.
R665 22k
R666 4.7k
R667 22k
R668 4.7k
R669 2.2k
R670 DEL.
R671 100
R672 15k
R673 12k
R674 10k
R675 4.7k
J661 DEL.
J662 DEL.
Q661 2SC3326B
Q662 2SC3326B
Q663 BA4558
Q664 RN2404
D661 MA4056-L
J661/2
50A10 JP
50A60 50A50 55A60 61A60 43A10 55A10 43AX60 50AX60 55AX60 DEL.
J654 DEL.
UY01 MKMP33
PRST SDA2 SCL2 HP VP GND +5V-2
10P NC Y-Comb +9V +9V C-Comb GND V-AV +5V-2 fsc SDA1 SCL1
8P GND Y-Comb +9V +9V C-Comb GND V-AV +5V-2 fsc
50A60 50A50 55A60 61A60 43AX60 50AX60 55AX60
43A10 50A10 55A10
G H I J K L
1 2 3 4


ANT 2
TV 2A
TV-Rout
TV-Lout
J601A
PVC7/16C UC
TA1304F
SDA
SCL
STE
BIL
SAP
FMONO
MODE
VCL F/L
Vcc
OFFSET CANCEL
L-IN
W-LPF
GND
R-IN
BIAS F/L
L-OUT
BASS LPF
TRE HPF
W-OUT
R-OUT
SBS
L
R
AN7805
AN7809
MTZJ6.2B
MTZJ11B
MTZJ9.1B
+11V
+15V
TC74HC4066AF
MA111
2SC2712Y
2SA1162-Y
2SC3326B
MC14053BFEL
TC4053BP
SCL1
SDA1
SCL2
SDA2
CONV-G
CONV-R
CONV-B
CONV-Y/S
TEN2011
P708
BB15P
D-CONV
TO PIP
TO MW
(TRI-NORMA)
DEL.
JP
PIP
GJ51
GJ52
GJ53
GJ54
GJ55
QR17
RR58
RR59
10K
39K
TC4053BP

4 5 6 7 8


Q752 STK392-110 (H-OUT)
Q751 STK392-110 (V-OUT)
(B-H)
(G-H)
(R-H)
(B-V)
(G-V)
(R-V)
Q601 AN216H
Q680 50V470u
Q681 16V10u
Q682 2SC3326B
Q683 2SC3326B
Q766 2SC2712Y
Q765 2SC2712Y
Q776 2SC2712Y
Q612 2SA1162-Y
Q830 P009RD11
Q831 P005RD11
H/S 23476213
D607 MA8220-M
D608 MA8220-M
D611 MA111
D612 MA111
D613 MA111
D601 MA111
D602 MA111
D603 MA111
D604 MA111
D715 MA111
D7712
D7713
P495 PIN
P709 8P15P
MUTE
SPM
+38V
+9V
+5V-2
GND
AFC
DF. D
V I Y
V I Y R
F H C (
+ 9 V
D P C

9	10	11	12	13



SIGNAL/CONV
50A60

G H I J K L

13 14 15 16

LIVE AREA

T461 Heater

Q402 ⑤ | Q404 ⑥ | Q404 ⑦ | P417 ⑧

NOTE:

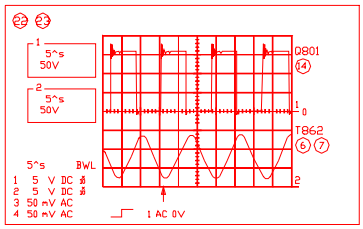
1. RESISTOR: Resistance is shown in ohm (k = 1,000, M = 1,000,000) . All resistors are 1/6W and 5% tolerance unless otherwise noted as the following marks.
   1/2R | Metal or Metal oxide of 1/2 watt. 1/2S | Solid of 1/2 watt.
   OF | Fuse resistor of 1 watt. 1W | Cement of 1W watts
   K = ±10% G = 2% F = 1%

2. CAPACITOR: Unless otherwise noted in schematic,all capacitor values less than 1 are expressed in uF,and the values more than 1 in pF.
   All capacitors are ceramic 50V, unless otherwise noted as the following marks.
   TE: Electrolytic capacitor MY: Mylar capacitor

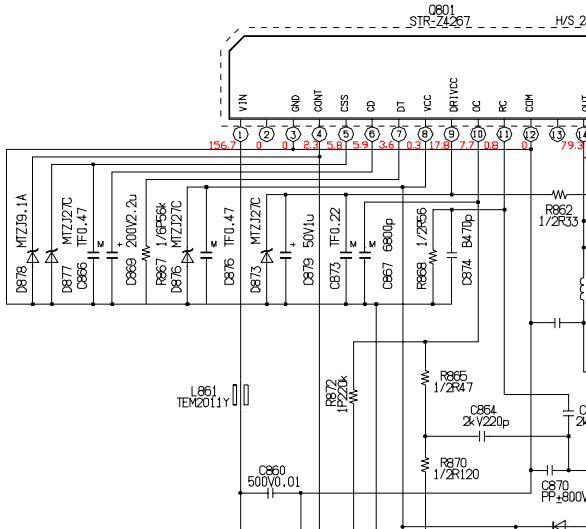
3. The parts indicated with * have special characteristics should be replaced with identical parts only.

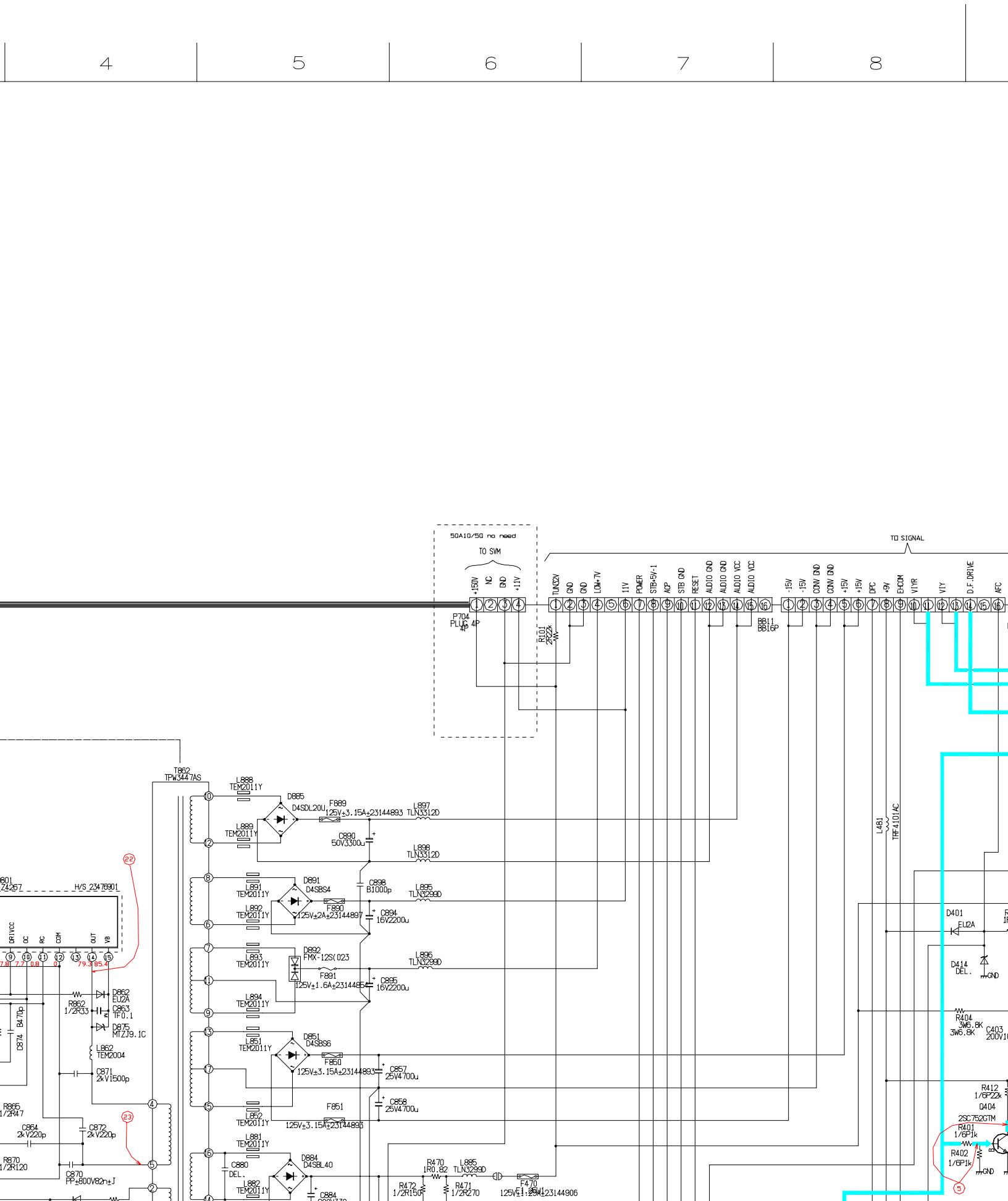
4. This schematic diagram is the latest the time of copying, so it must be changed in accordance with all informed modification notices.

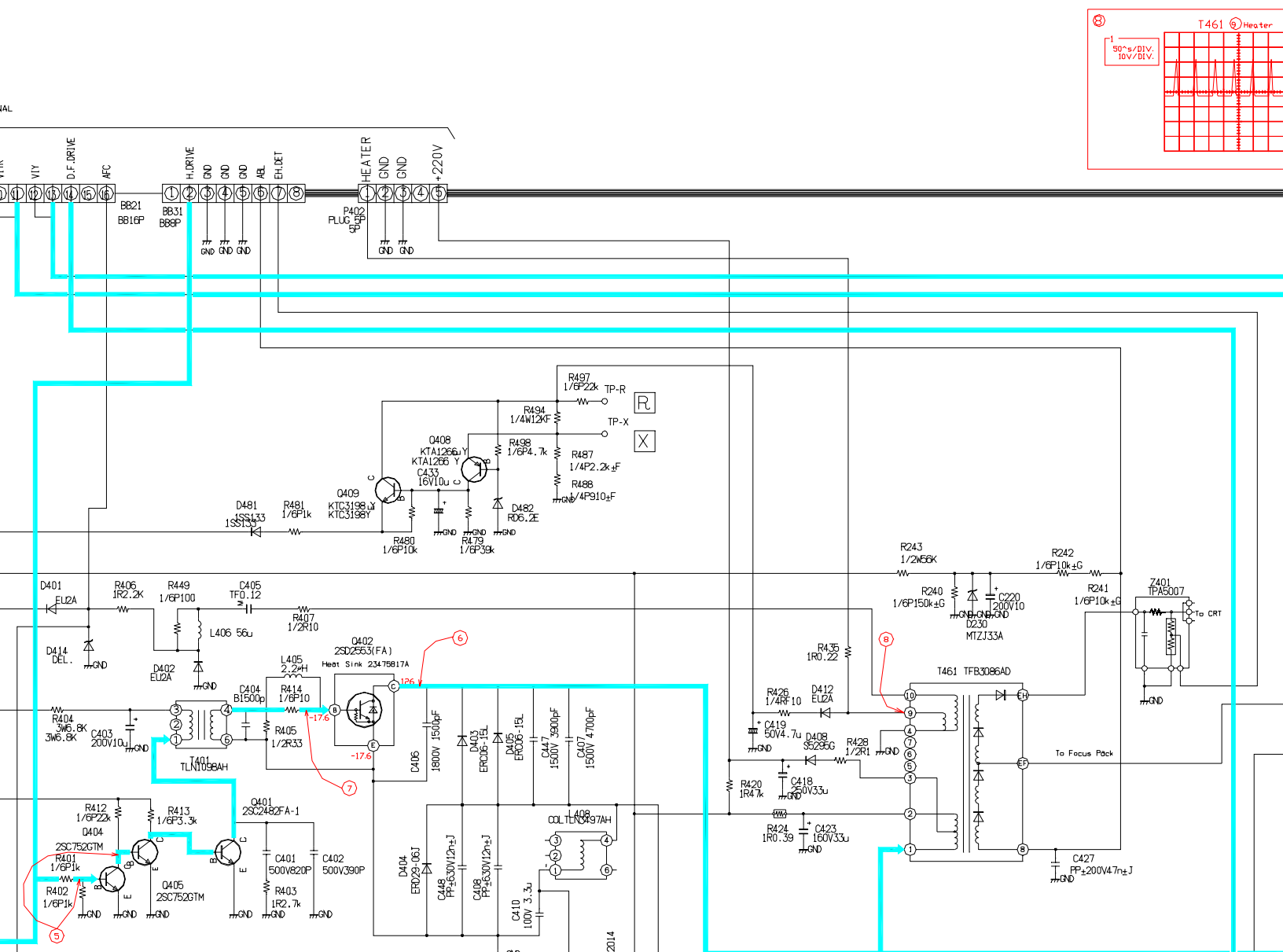
50A60
DEF/POWER


5^s
50V
5^s
50V
Q801
14
TP62
6 7
5^s BWL
1 5 V DC 決
2 5 V DC 決
3 50 mV AC
4 50 mV AC
1 AC 0V

LIVE AREA

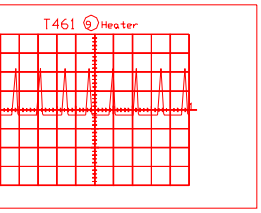

Q801
STR-Z4267
H/S_2
VIN
GND
CONT
CSS
CD
DT
VCC
DRIVCC
OC
RC
COM
156.7
0
0
2.3
5.8
5.9
3.6
0.3
17.8
7.7
0.8
D878 MTZJ9.1A
D877 MTZJ27C
C866 TF0.47
C869 200V2.2u
R867 1/6F56k
D876 MTZJ27C
C876 TF0.47
D873 MTZJ27C
C879 50V1u
C873 TF0.22
C867 6800p
R868 1/2R56
C874 B470p
R862 1/2R33
L861 TEM2011Y
R872 1/2220k
R865 1/2R47
C864 2kV220p
C860 500V0.01
R870 1/2R120
C870 PP±800V

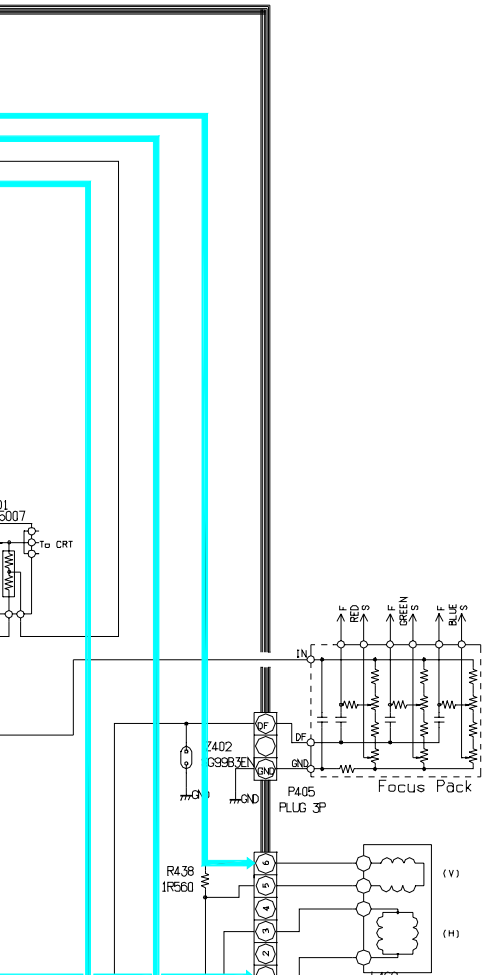

4
5
6
7
8
50A10/50 no need
TO SVM
+150V
NC
GND
+11V
P704
PLUG 4P
TO SIGNAL
TUN32V
GND
GND
LOW-7V
11V
POWER
STB-5V-1
ACP
STB GND
RESET
AUDIO GND
AUDIO GND
AUDIO VCC
AUDIO VCC
-15V
-15V
CONV GND
CONV GND
+15V
+15V
DFC
+9V
EHCOM
V1YR
V1Y
D.F.DRIVE
AFC
BB11
BB16P
R101
2R22k
T862
TPW3447AS
L888
TEM2011Y
D885
D4SDL20U
F889
125V±3.15A±23144893
L897
TLN3312D
L889
TEM2011Y
C890
50V3300u
L898
TLN3312D
L891
TEM2011Y
D891
D4SBS4
C898
B1000p
L895
TLN3299D
L892
TEM2011Y
F890
125V±2A±23144897
C894
16V2200u
L893
TEM2011Y
D892
FMX-12S(023
L896
TLN3299D
F891
125V±1.6A±23144885
C895
16V2200u
L894
TEM2011Y
L851
TEM2011Y
D851
D4SBS6
F850
125V±3.15A±23144883
C857
25V4700u
F851
C858
25V4700u
L852
TEM2011Y
125V±3.15A±23144895
L881
TEM2011Y
C880
DEL.
D884
D4SBL40
L882
TEM2011Y
C884
R470
1R0.82
L885
TLN3299D
F470
125V±1.25A±23144906
R472
1/2R150
R471
1/2R270
L481
TRF4101AC
D401
EU2A
D414
DEL.
GND
R404
3W6.8K
3W6.8K
C403
200V1
R412
1/6P22k
Q404
2SC752GTM
R401
1/6P1k
R402
1/6P1k
GND
H/S 23476901
Z4267
DRIVCC
OC
RC
COM
OUT
VB
7.8
7.7
0.8
0
79.3
85.4
D862
EU2A
R862
1/2R33
C863
TF0.1
D875
MTZJ9.1C
L862
TEM2004
C871
2kV1500p
C874
B470p
R865
1/2R47
C864
2kV220p
C872
2kV220p
R870
1/2R120
C870
PP±800V82n±J
22
23

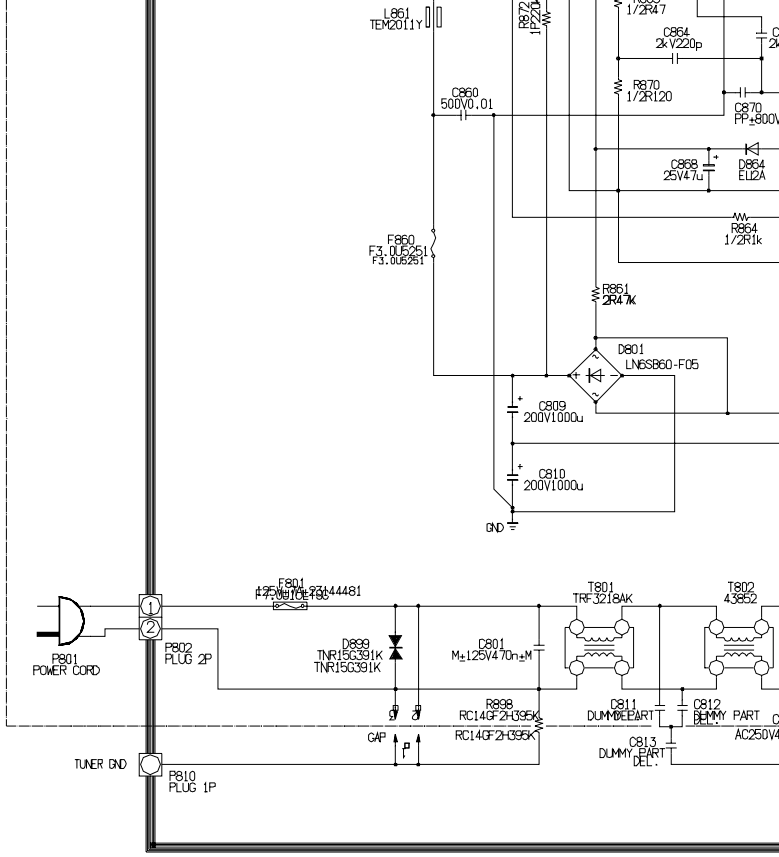

T461 ⑨ Heater
50^s/DIV.
10V/DIV.
V1V
D.F.DRIVE
AFC
H.DRIVE
GND
ABL
EHT.DET
HEATER
+220V
BB21
BB16P
BB31
BB8P
P402
PLUG 5P
R497 1/6P22k TP-R
R494 1/4W12KF
TP-X
Q408 KTA1266uY KTA1266 Y
R498 1/6P4.7k
R487 1/4P2.2k±F
R488 1/4P910±F
C433 16V10u
Q409 KTC3198uY KTC3198Y
D481 1SS133
R481 1/6P1k
D482 RD6.2E
R480 1/6P10k
R479 1/6P39k
D401 EU2A
R406 1R2.2K
R449 1/6P100
C405 TF0.12
R407 1/2R10
L406 56u
D414 DEL.
D402 EU2A
L405 2.2uH
R414 1/6P10
Q402 2SD2553(FA) Heat Sink 23475817A
C404 B1500p
R405 1/2R33
T401 TLN1098AH
R404 3W6.8K
C403 200V10u
C406 1800V 1500pF
D403 ERC06-15L
D405 ERC06-15L
C447 1500V 3900pF
C407 1500V 470pF
R412 1/6P22k
R413 1/6P3.3k
Q404 2SC752GTM
R401 1/6P1k
R402 1/6P1k
Q405 2SC752GTM
Q401 2SC2482FA-1
C401 500V820P
C402 500V390P
R403 1R2.7k
D404 ERC29-06J
C448 PP±630V12n±J
C408 PP±630V12n±J
C410 100V 3.3u
L408 COILTENS197AH
R243 1/2W56K
R242 1/6P10k±G
R240 1/6P150k±G
C220 200V10
D230 MTZJ33A
R241 1/6P10k±G
Z401 TPA5007
To CRT
R435 1R0.22
T461 TFB3086AD
R426 1/4RF10
D412 EU2A
C419 50V4.7u
D408 S529SG
R428 1/2R1
To Focus Pack
R420 1R47k
C418 50V33u
R424 1R0.39
C423 160V33u
C427 PP±200V4.7n±J
126
-17.6
-17.6

13 14 15 16

A B C D E F







NOTE|

1. RESISTOR Resistance is shown In ohm |k = 1,000, M = 1,000,000] . All resistors are 1/6W and 5% tolerance carbon resistor.unless otherwise noted as the following marks.

1/2R | Metal or Metal oxide of 1/2 watt
1/2S | Solid of 1/2 watt
1RF | Fuse resistor of 1 watt
10W | Cement of 10 watts
K = ±10% G = 2% F = 1%

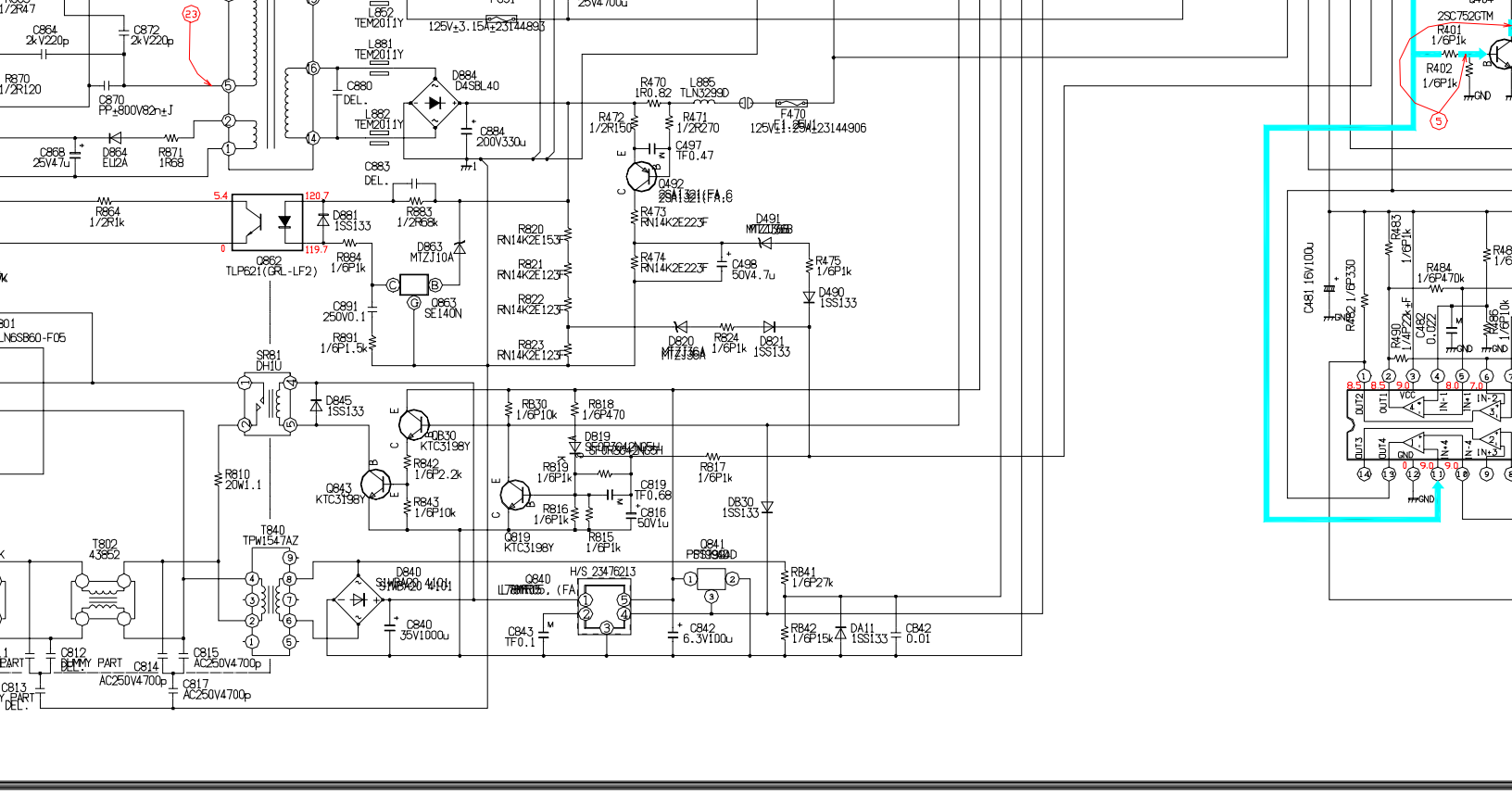
2.

3.

4.

G H I J K L

1 2 3



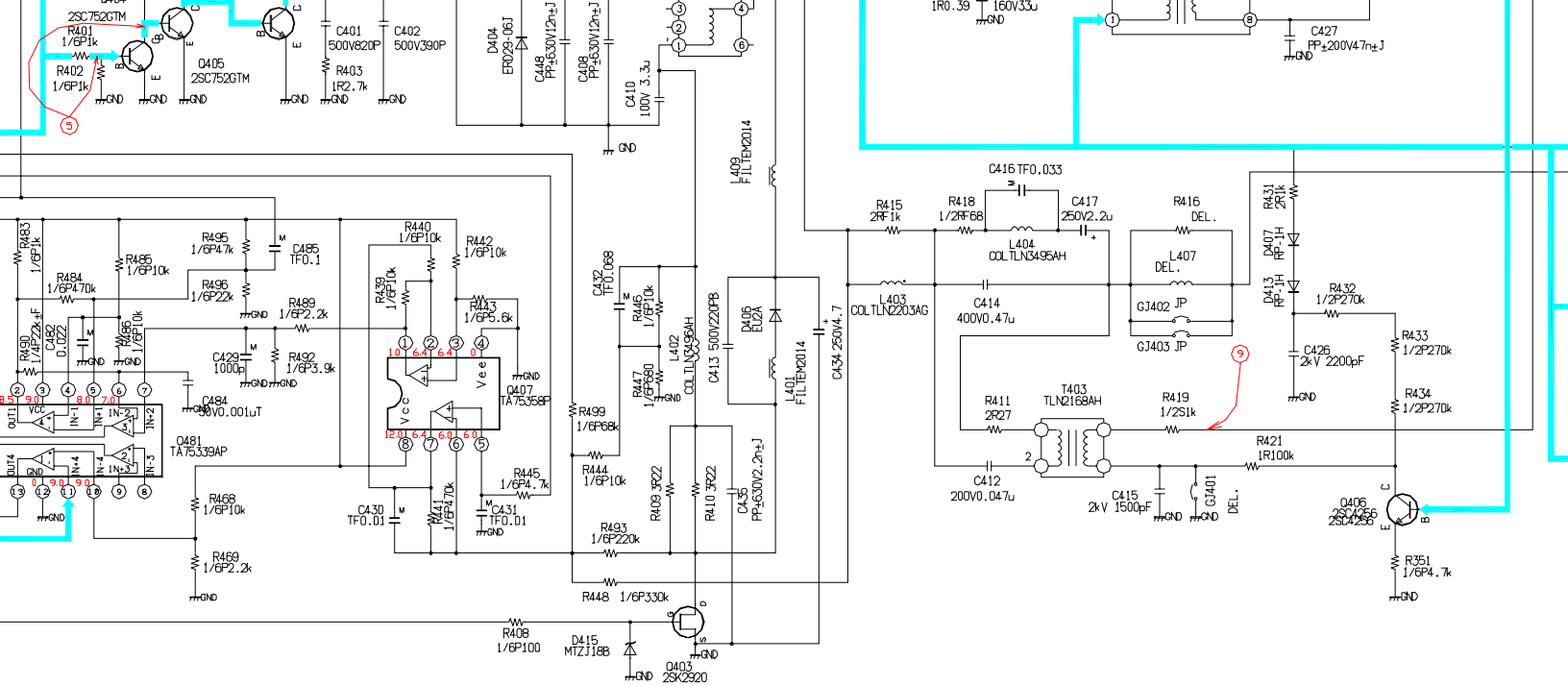
olerance

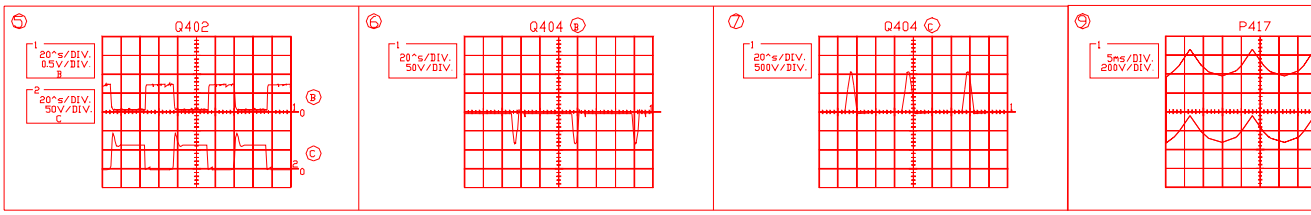
2.CAPACITOR Unless otherwise noted in schematic,all capacitor valuse less than 1 are expressed in μF,and the values more than 1 in pF.
All capacitors are ceramic 50V. unless otherwise noted as the following marks.

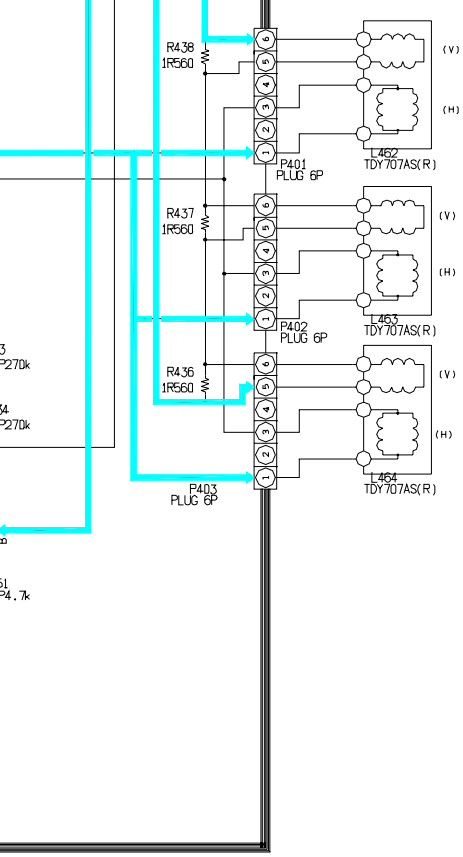
Electrolitic capacitor Mylar capacitor

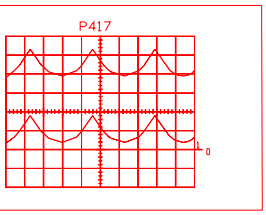
3. The parts indicated with * have special characteristics should be replaced with identical parts only.

4. This schematic diagram is the latest the time of copying, so it must be changed in accordance with all informed modification notices.


Q405 2SC752GTM
R401 1/6P1k
R402 1/6P1k
C401 500V820P
C402 500V390P
R403 1R2.7k
D404 ERD29-06J
C448 PP±630V12n±J
C408 PP±630V12n±J
C410 100V 3.3u
L409 FILTEM2014
R415 2RF1k
R418 1/2RF68
C416 TF0.033
C417 250V2.2u
L404 COILTLN3495AH
L403 COILTLN2203AG
C414 400V0.47u
R416 DEL.
L407 DEL.
GJ402 JP
GJ403 JP
C427 PP±200V47n±J
R431 2K1k
D407 RF-1H
D413 RF-1H
R432 1/2P270k
C426 2kV 2200pF
R433 1/2P270k
R434 1/2P270k
T403 TLN2168AH
R411 2R27
R419 1/2S1k
R421 1R100k
C412 200V0.047u
C415 2kV 1500pF
GJ401 DEL.
Q406 2SC4256
R351 1/6P4.7k
R483 1/6P1k
R484 1/6P470k
R485 1/6P10k
R486 1/6P10k
R490 1/4P22k±F
C482 0.022
R495 1/6P47k
C485 TF0.1
R496 1/6P22k
R489 1/6P2.2k
C429 1000p
R492 1/6P3.9k
C484 50V0.001uT
Q481 TA75339AP
R468 1/6P10k
R469 1/6P2.2k
R440 1/6P10k
R442 1/6P10k
R439 1/6P10k
R443 1/6P5.6k
Q407 TA75358P
C430 TF0.01
R441 1/6P470k
C431 TF0.01
R445 1/6P4.7k
C432 TF0.068
R446 1/6P10k
L402 COILTLN3495AH
R447 1/6P680
R499 1/6P68k
R444 1/6P10k
R493 1/6P220k
R403 3R22
R410 3R22
C435 PP±630V2.2n±J
C413 500V220PB
D406 EU2A
L401 FILTEM2014
C434 250V4.7
R448 1/6P330k
R408 1/6P100
D415 MTZJ18B
Q403 2SK2920


5
Q402
20^s/DIV. 0.5V/DIV. B
20^s/DIV. 50V/DIV. C
6
Q404 B
20^s/DIV. 50V/DIV.
7
Q404 C
20^s/DIV. 500V/DIV.
9
P417
5ms/DIV. 200V/DIV.



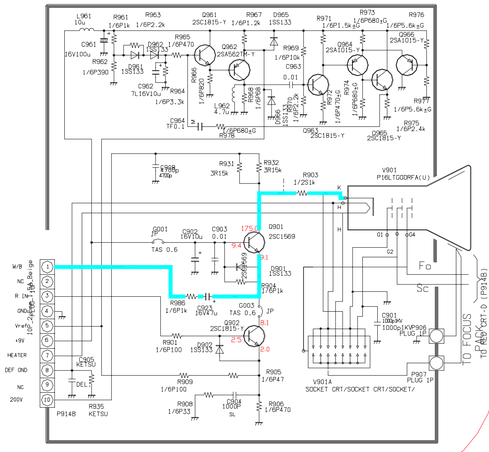


50A60
DEF/POWER

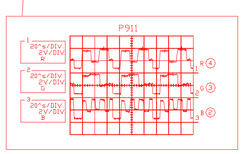
G H I J K L

3 14 15 16

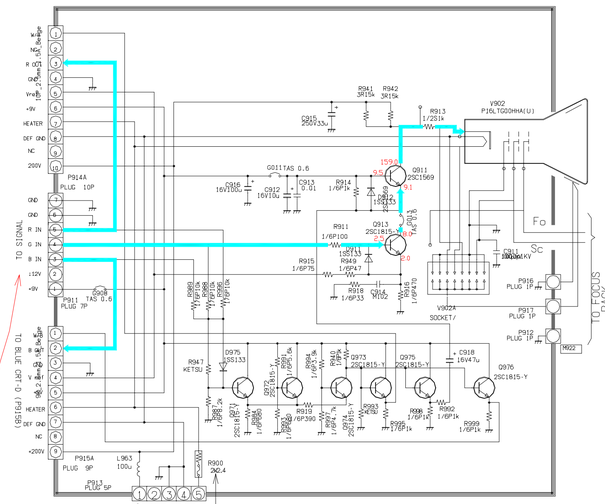
CRT-D/R PB9454-1



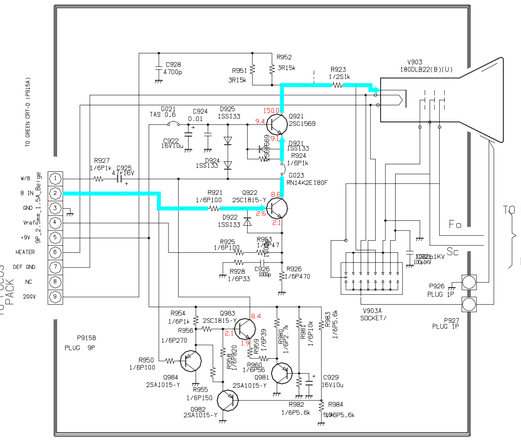
PARTS / MODEL	V901.V902.V903 CRT(R).(G).(B)	R900 Heater Resistor
50A60 55A60 61A60	P16LTG00RFA(U) P16LTG00HHA(U) 180DLB22(B)(U)	2W 2.4ohm SN(24000906L
50A50 43A10 50A10 55A10	180DLB22(R.G.B)	
43AX60 50AX60 55AX60	P16LTX10(RFA) P16LTX10(HKA) P16LTX10(BMB)	2W 1.8ohm SN(24000945L



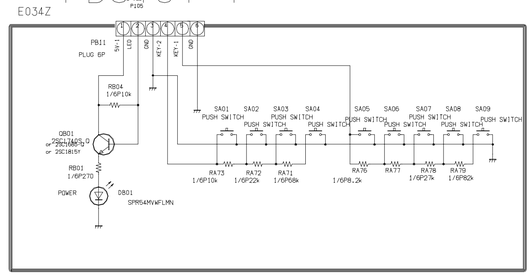
CRT-D/G PB9454-2



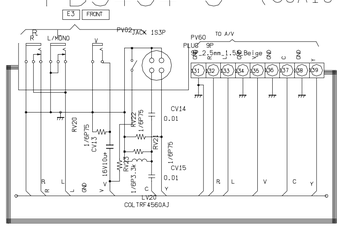
CRT-D/B PB9454-3



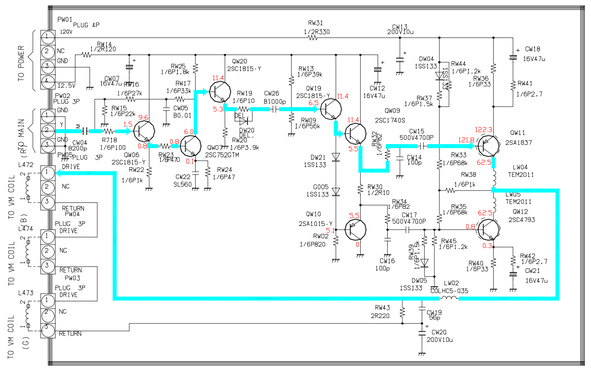
50/55/61F-CON PB9454-4



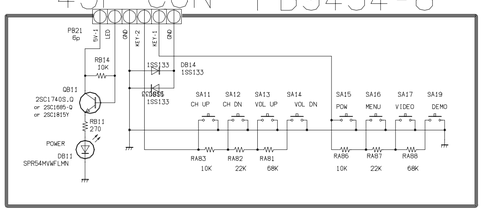
50/55/61F-IN PB9454-5 (50A10 NOT USE)



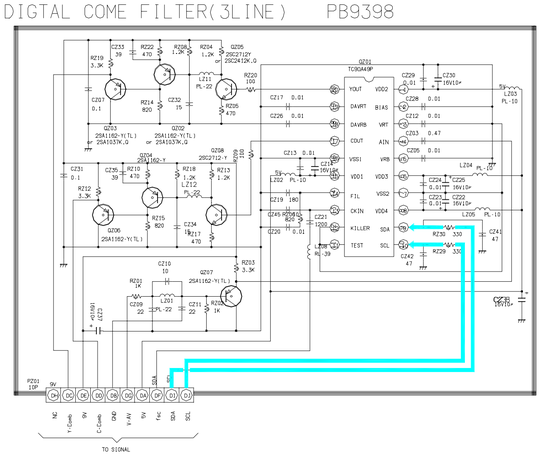
SVM UNIT PB9454-6



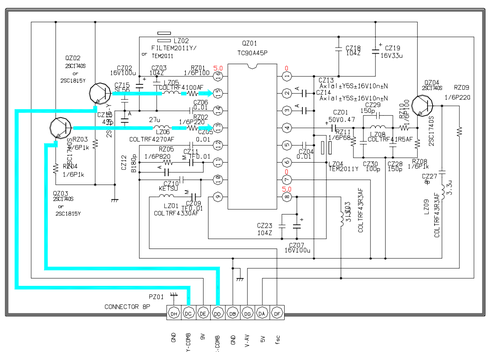
43F-CON PB9454-8



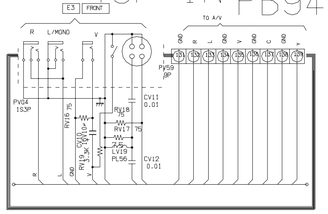
DIGTAL COME FILTER(3LINE) PB9398



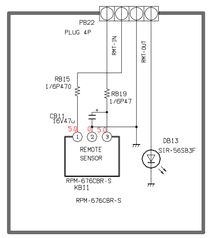
DIGI-COMB PB9454-7



43F-IN PB9454-9



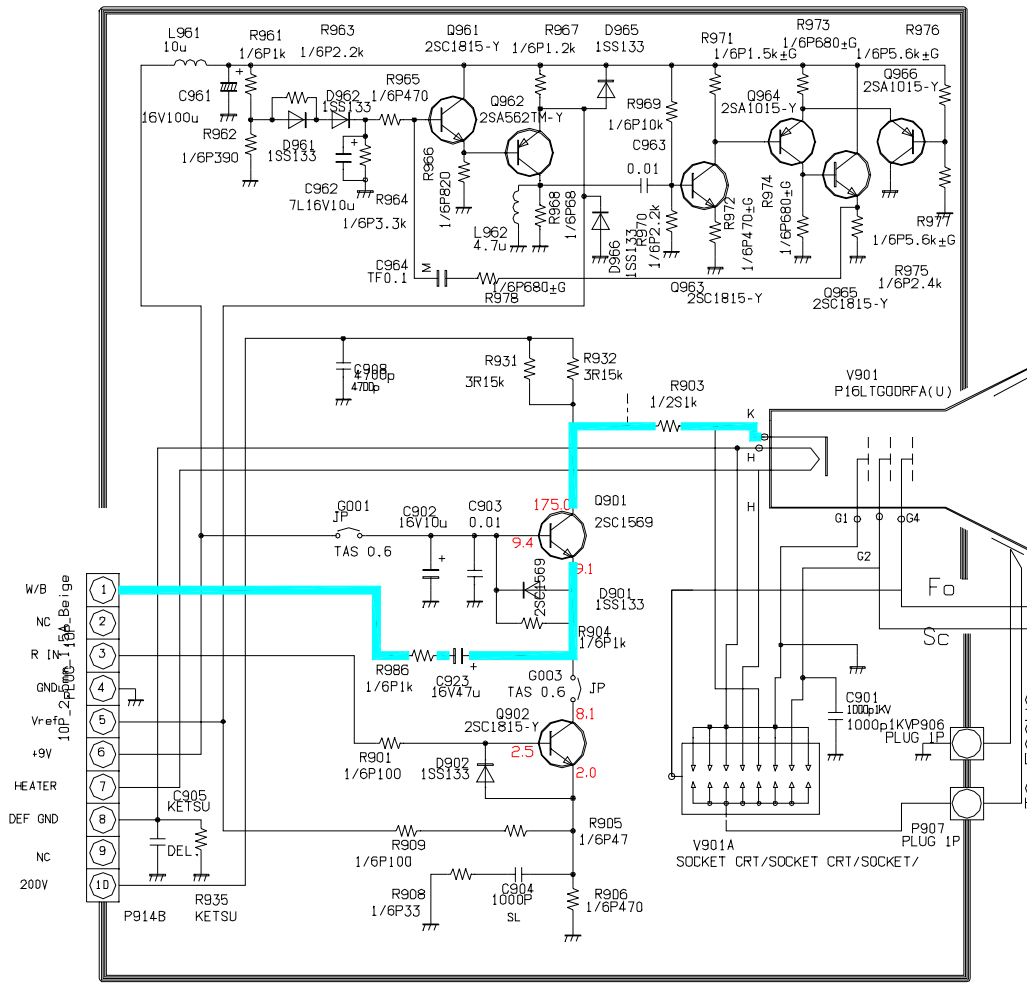
REM PB9454-10



CRT-D/FRONT/SVM

50A60

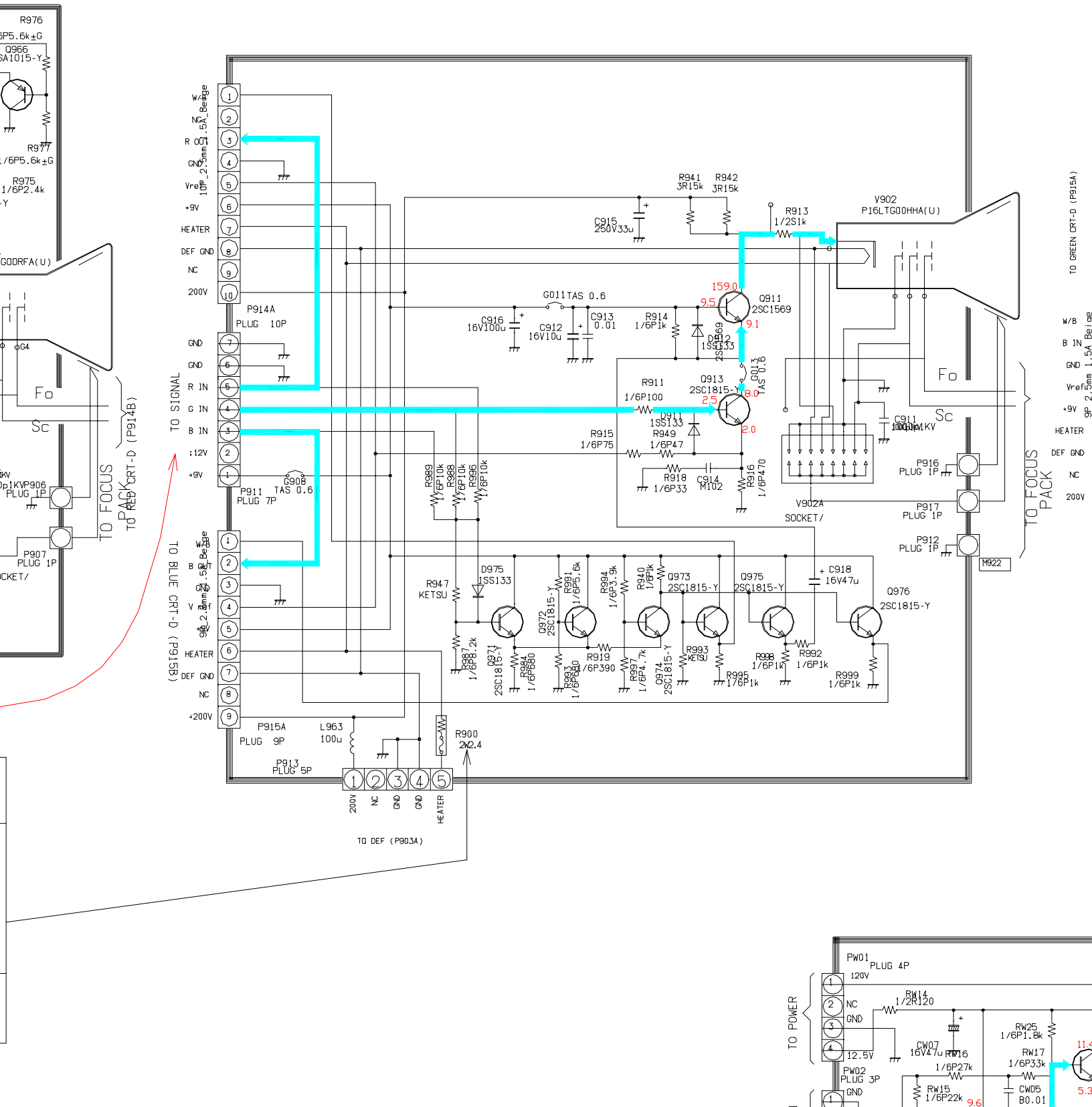
CRT-D/R PB9454-1



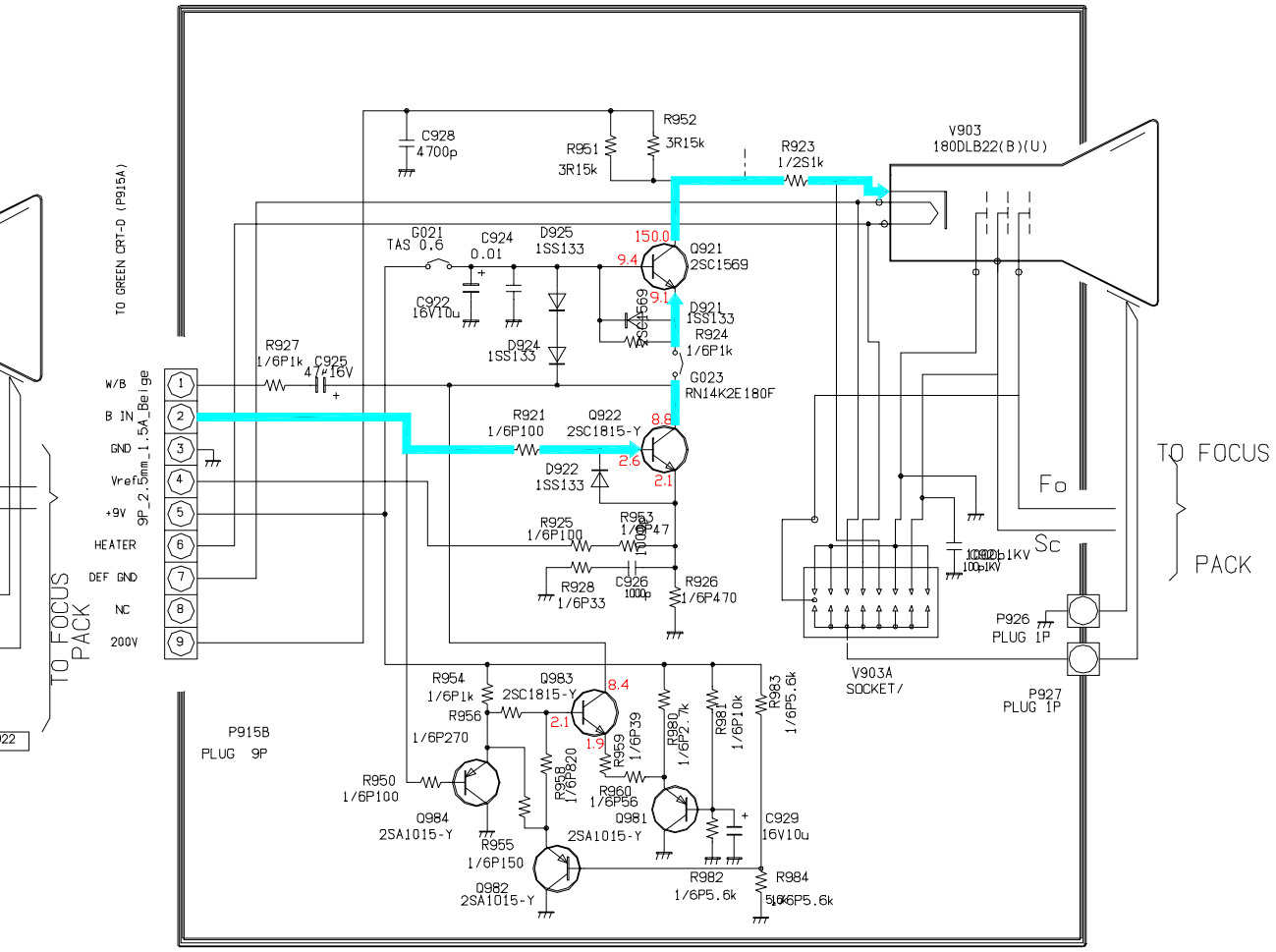
PARTS / MODEL	V901,V902,V903 CRT(R),(G),(B)	R900 Heater Resistor
50A60 55A60 61A60	P16LTG00RFA(U) P16LTG00HHA(U) 180DLB22(B)(U)	2W 2.4ohm SN|24000906L
50A50 43A10 50A10 55A10	180DLB22(R,G,B)	
43AX60 50AX60 55AX60	P16LTX10(RFA) P16LTX10(HKA) P16LTX10(BMB)	2W 1.8ohm SN|24000945L

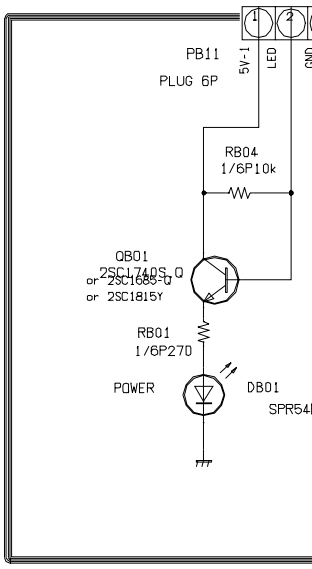
3 4 5 6

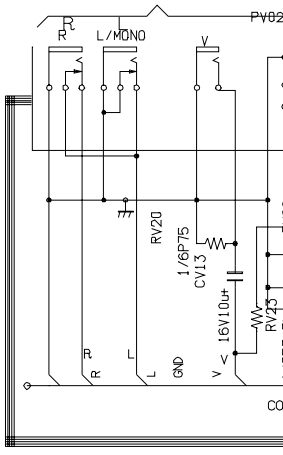
-1 CRT-D/G PB9454-2



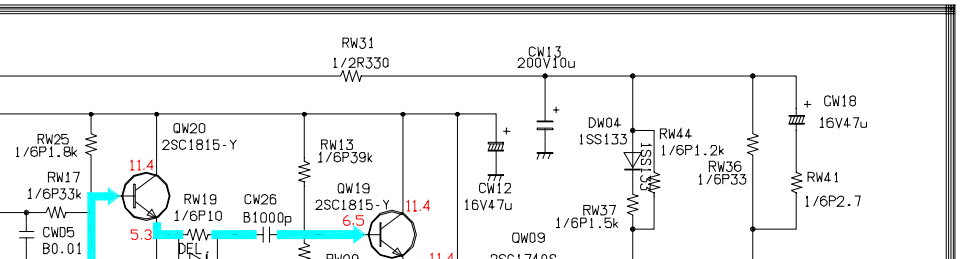
CRT-D/B PB9454-3

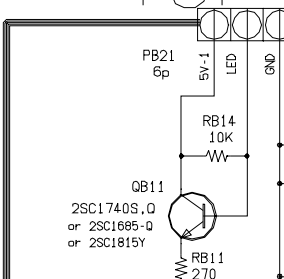






SVM UNIT PB9454-6

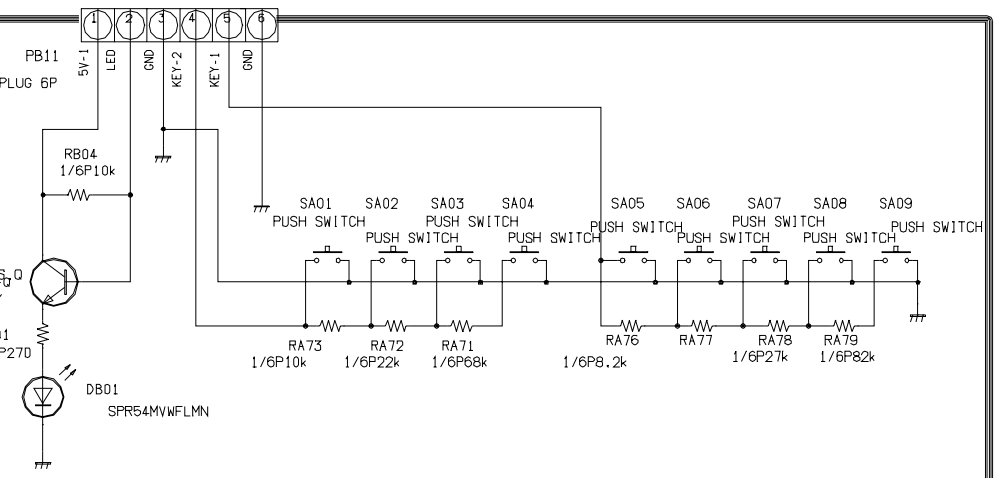




10 | 11 | 12

0/55/61F-CON

PB9454-4

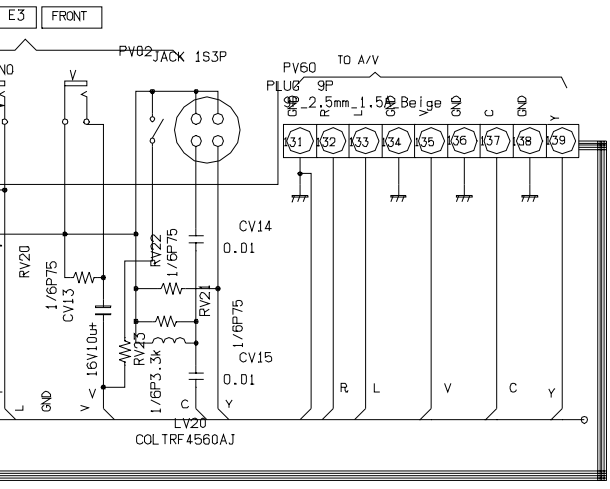


A

B

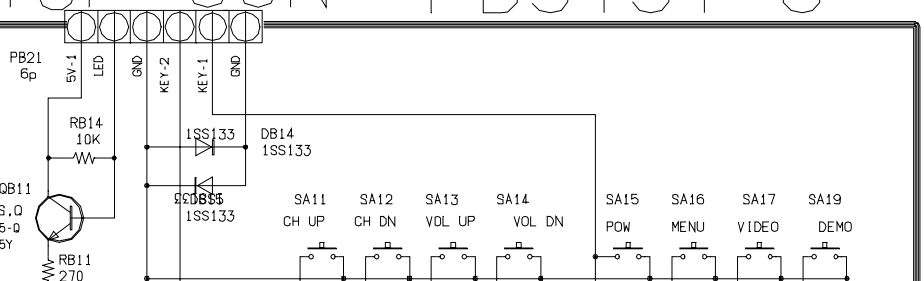
60/55/61F-IN

PB9454-5 (50A10 NOT USE)



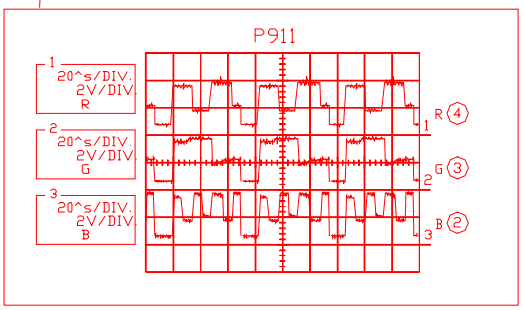
C

43F-CON PB9454-8

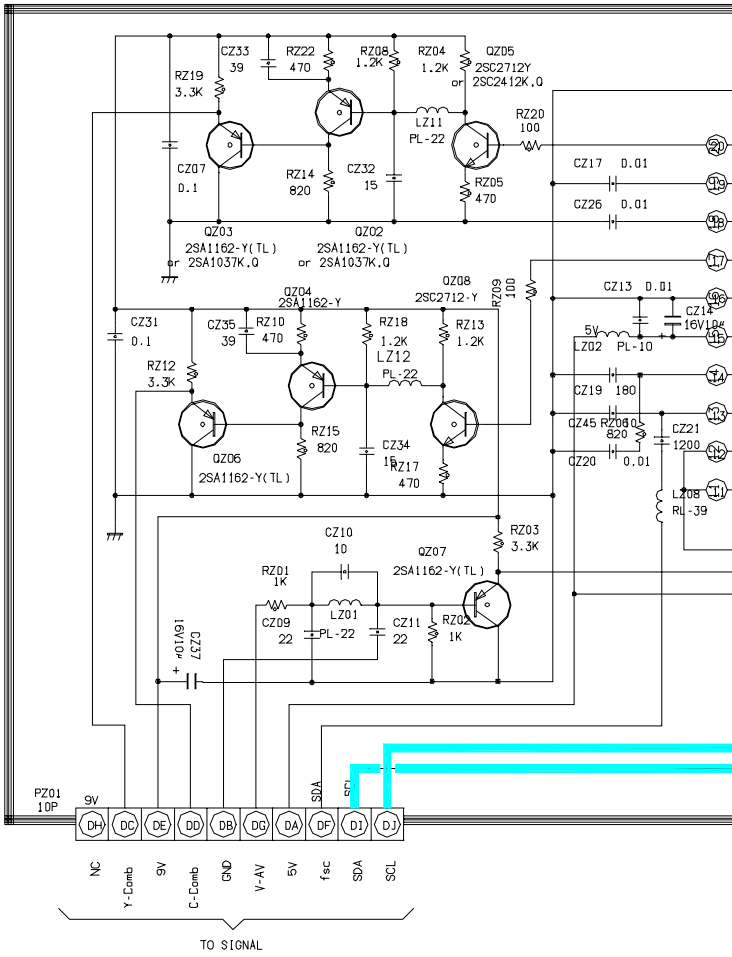


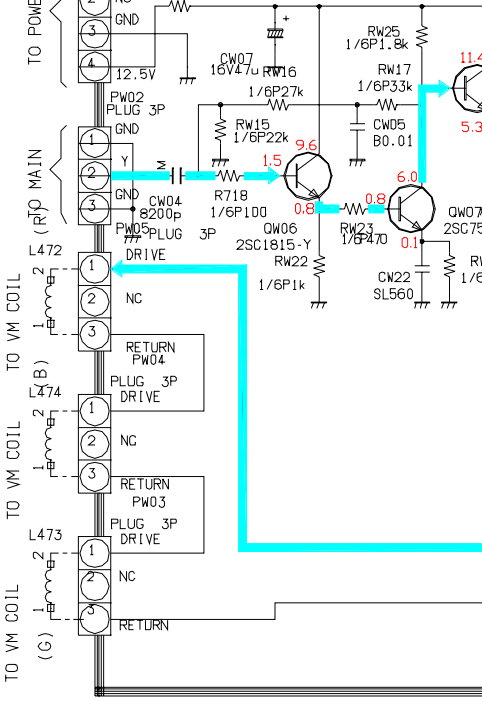
D

50AX60 55AX60	P16LTX10(HKA) P16LTX10(BMB)	2W 1.8Ohm SN|24000945L

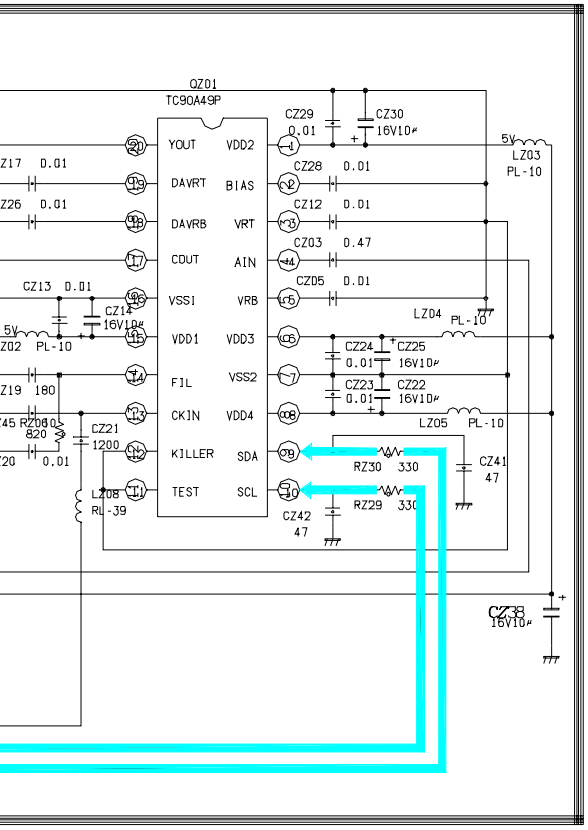


DIGTAL COME FILTER(3LINE)

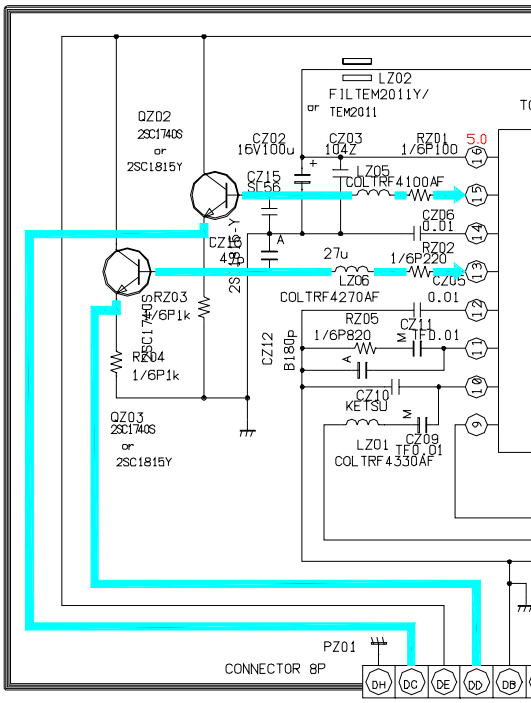


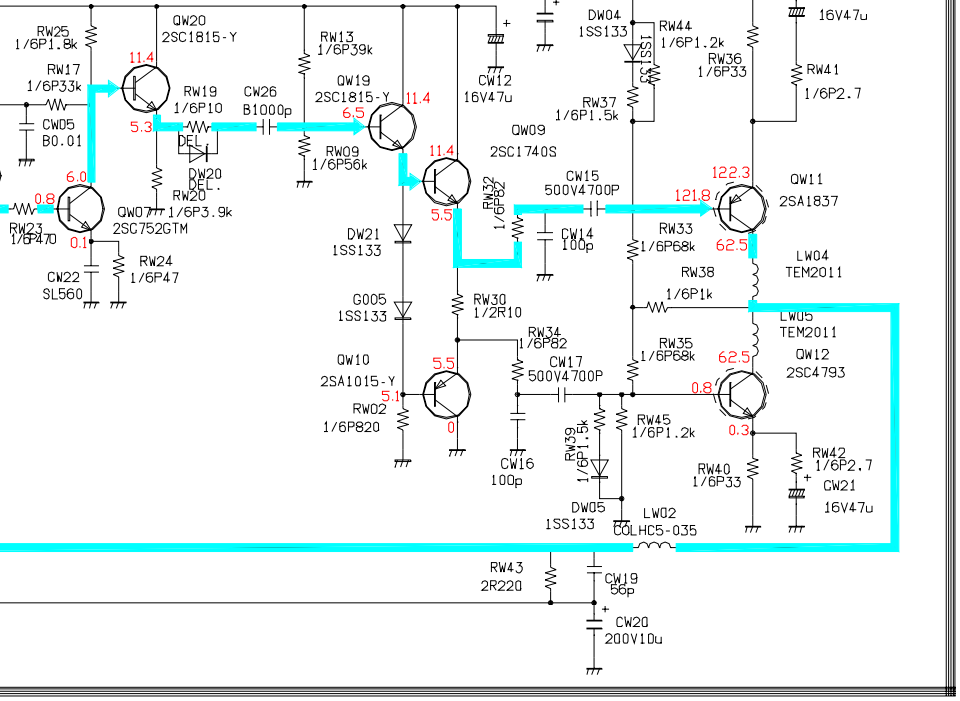


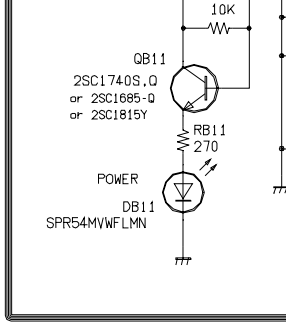
PB9398

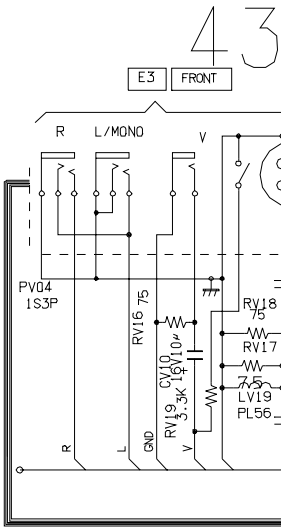


DIGI-COMB

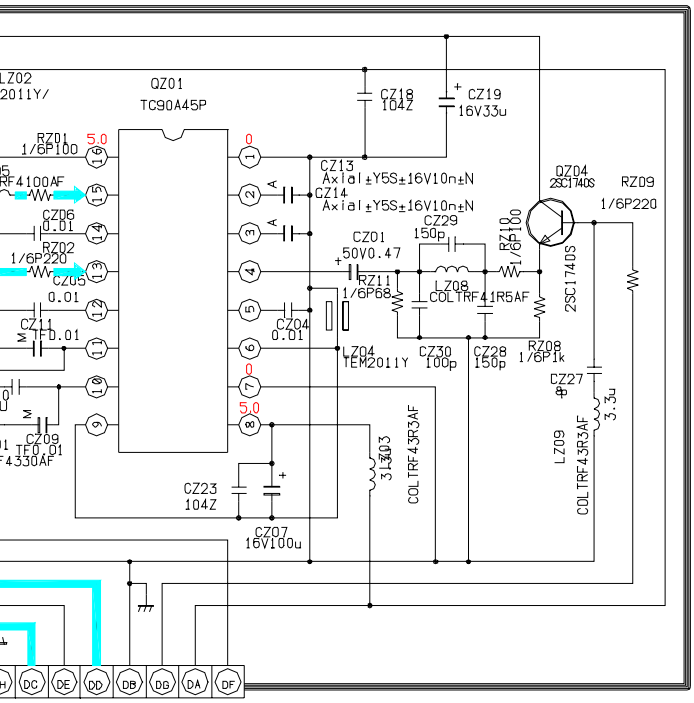


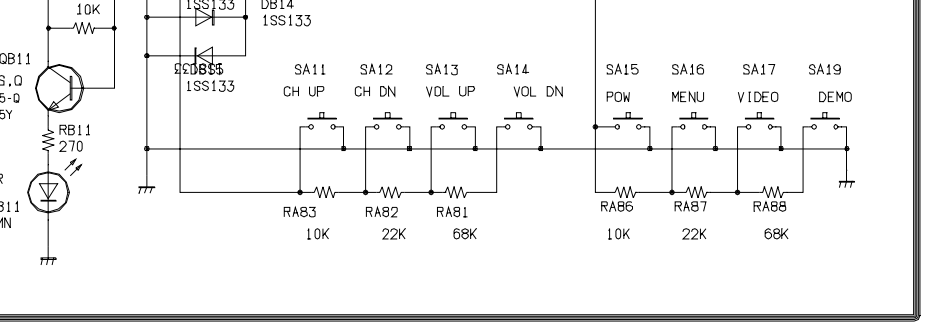

QW20
2SC1815-Y
RW25
1/6P1.8k
RW17
1/6P33k
CWD5
B0.01
RW19
1/6P10
CW26
B1000p
DEL
DW20
DEL
RW20
1/6P3.9k
QW07
2SC752GTM
RW23
1/6P470
CW22
SL560
RW24
1/6P47
RW13
1/6P39k
QW19
2SC1815-Y
RW09
1/6P56k
CW12
16V47u
DW04
1SS133
RW44
1/6P1.2k
RW36
1/6P33
RW37
1/6P1.5k
QW09
2SC1740S
RW41
1/6P2.7
16V47u
CW15
500V4700P
RW32
1/6P82
CW14
100p
DW21
1SS133
G005
1SS133
RW30
1/2R10
RW34
1/6P82
QW10
2SA1015-Y
RW02
1/6P820
CW17
500V4700P
CW16
100p
RW39
1/6P1.5k
RW45
1/6P1.2k
RW35
1/6P68k
RW33
1/6P68k
RW38
1/6P1k
LW04
TEM2011
LW05
TEM2011
QW11
2SA1837
QW12
2SC4793
RW40
1/6P33
RW42
1/6P2.7
CW21
16V47u
DW05
1SS133
LW02
COLHC5-035
RW43
2R220
CW19
56p
CW20
200V10u


10K
QB11
2SC1740S,Q
or 2SC1685-Q
or 2SC1815Y
RB11
270
POWER
DB11
SPR54MVWFLMN

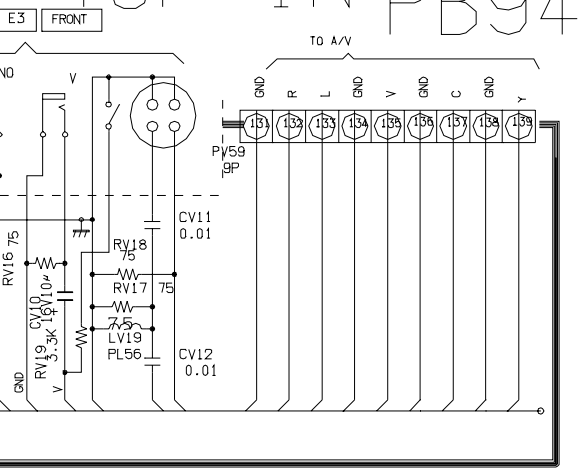

E3
FRONT
R
L/MONO
V
PV04
1S3P
RV16 75
CV10
RV19
3.3K
RV18
75
RV17
LV19
PL56
GND

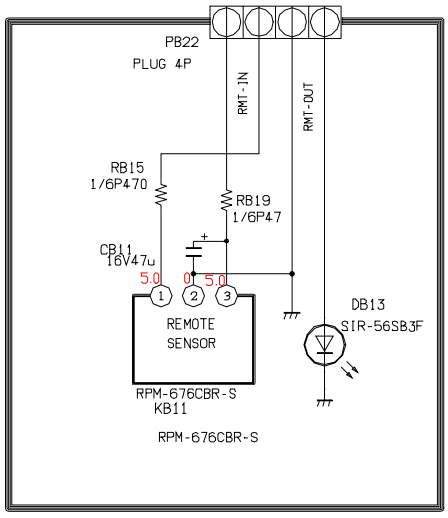
MB PB9454-7


QZ01
TC90A45P
CZ18
104Z
CZ19
16V33u
RZ01
1/6P100
CZ13
Axial±Y5S±16V10n±N
CZ14
Axial±Y5S±16V10n±N
CZ29
150p
CZ01
50V0.47
RZ11
1/6P68
LZ08
COLTRF41R5AF
QZ04
2SC1740S
RZ09
1/6P220
RZ10
1/6P100
CZ06
0.01
RZ02
1/6P220
CZ05
0.01
CZ11
TFD.01
CZ04
0.01
LZ04
TEM2011Y
CZ30
100p
CZ28
150p
RZ08
1/6P1k
CZ27
3.3u
LZ09
COLTRF43R3AF
CZ23
104Z
CZ07
16V100u
LZ03
COLTRF43R3AF
DC
DE
DD
DB
DB
DA
DF
Y-COMB
9V
C-COMB
GND
V-AV
5V
fsc



43F - IN PB9454-9





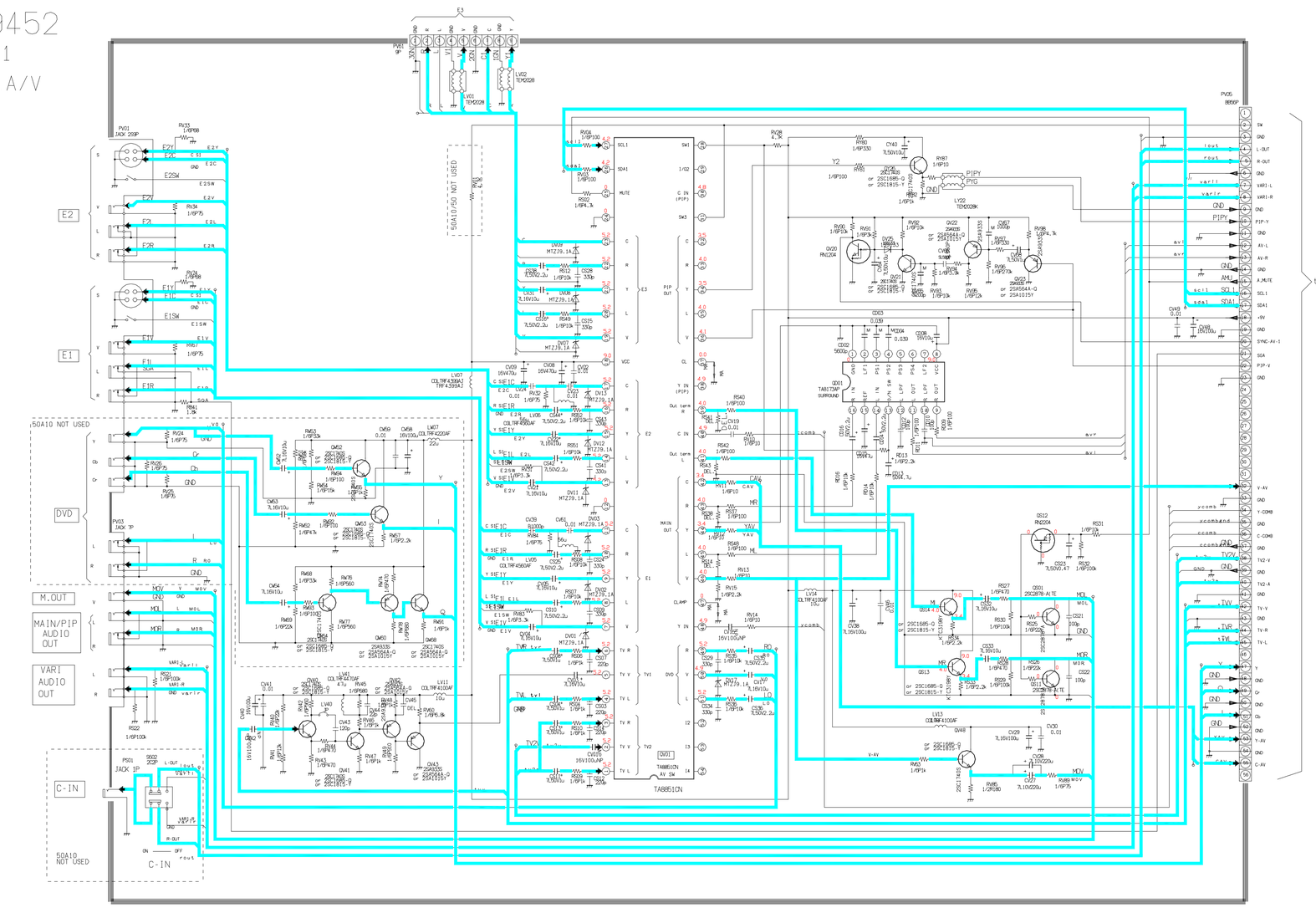
REM

PB9454-10

CRT-D/FRONT/SVM

50A60

PB9452
UV01
BACK.A/V

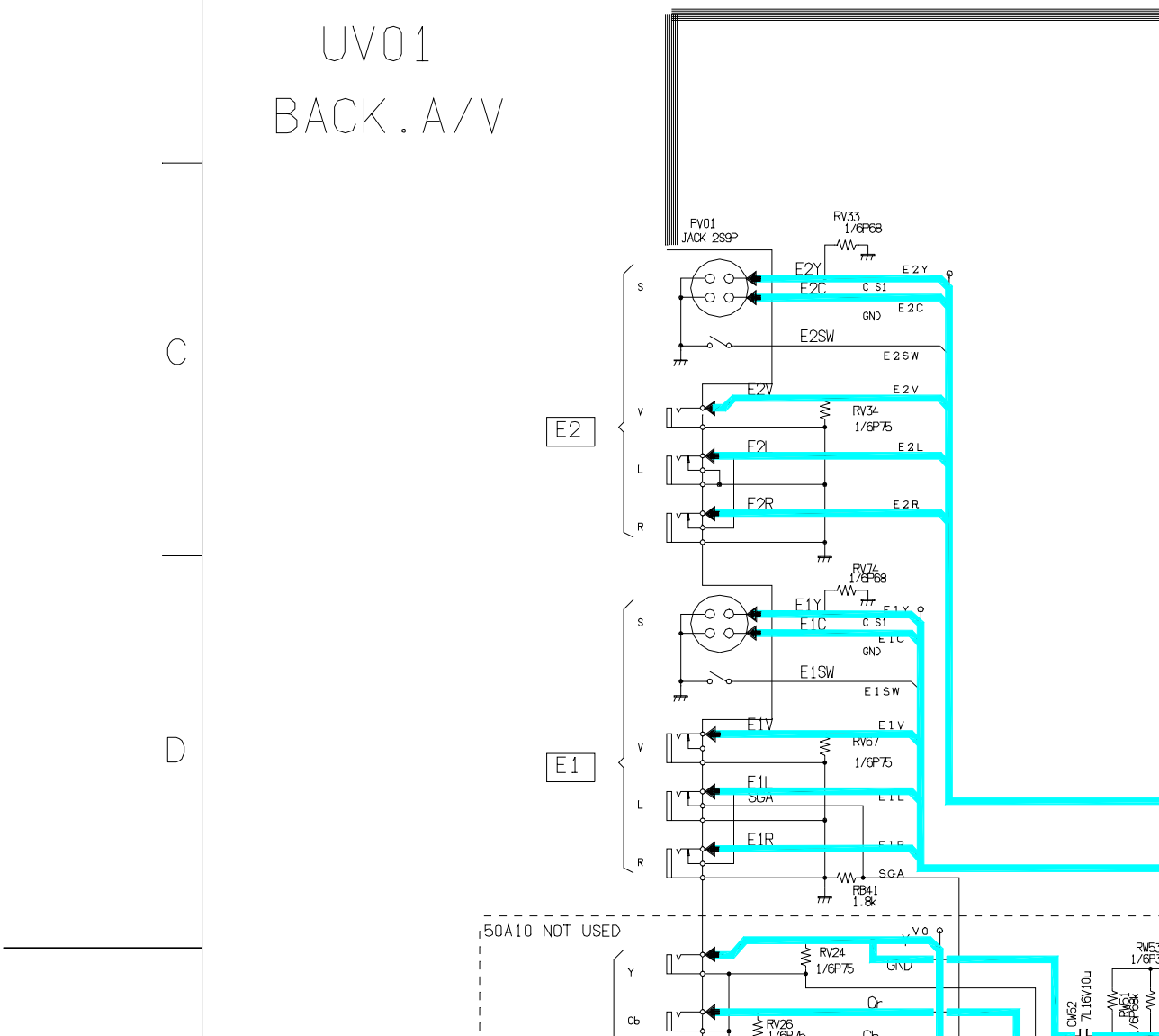


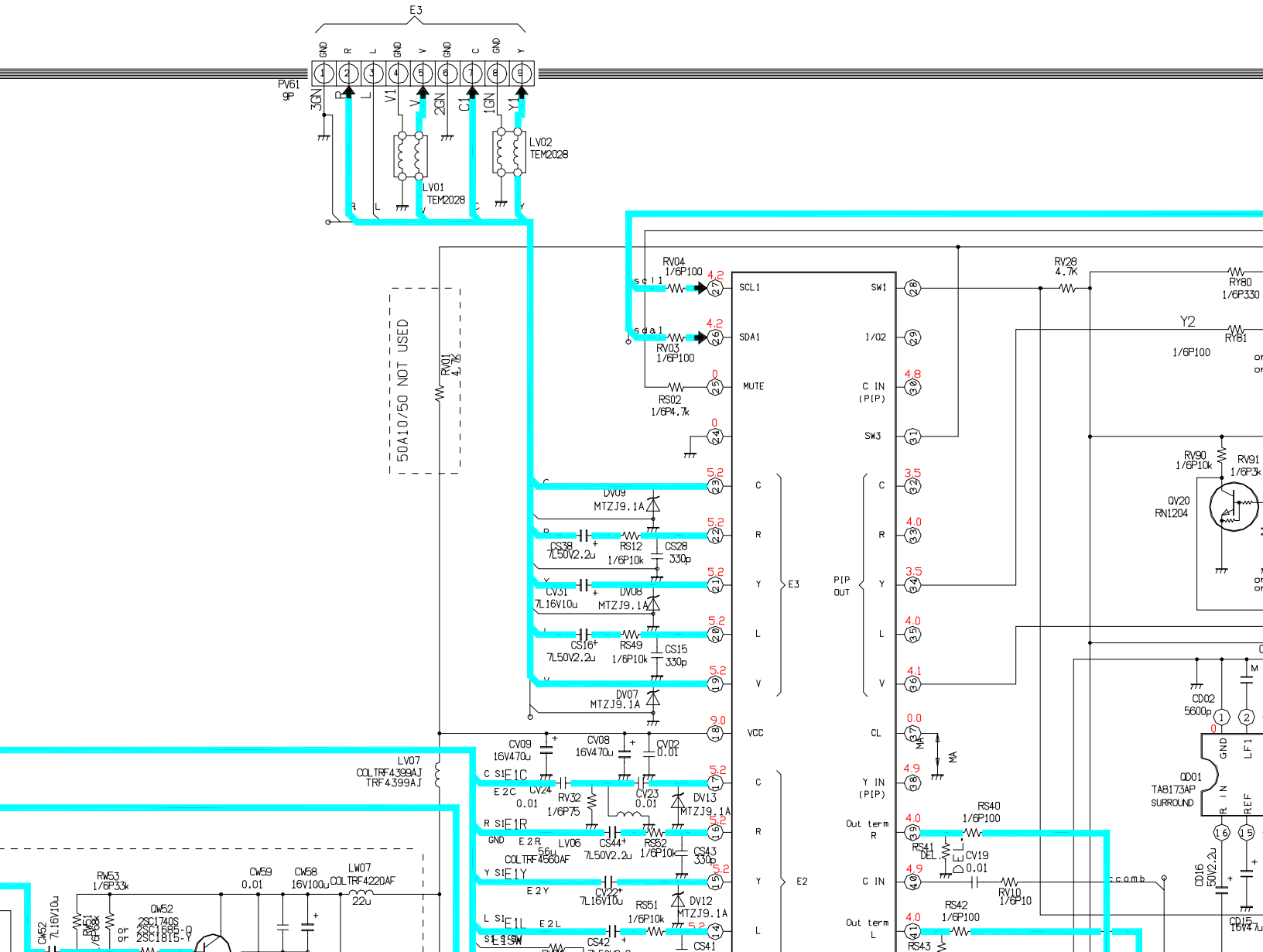
50A60
AV

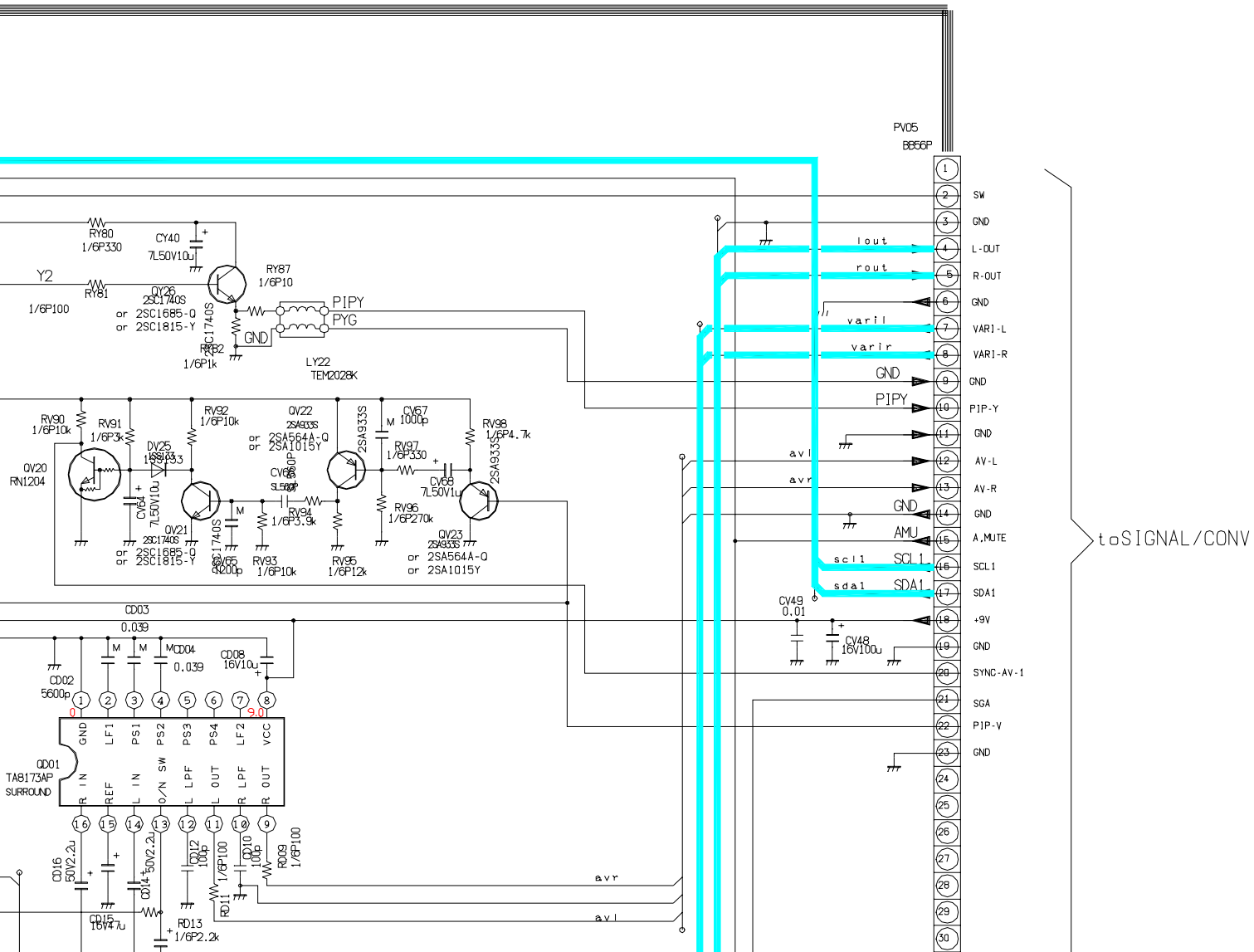
PB9452

UV01

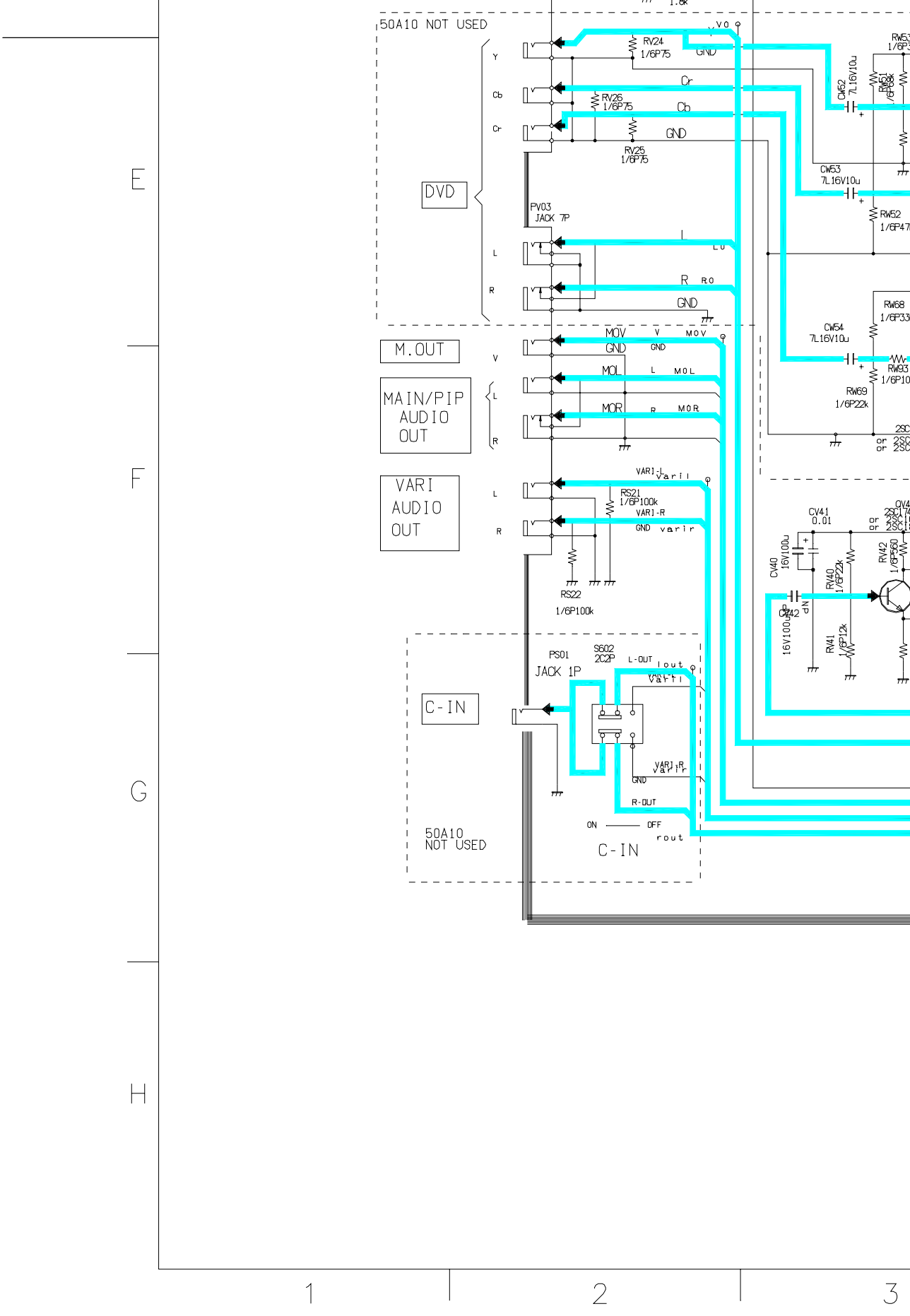
BACK.A/V

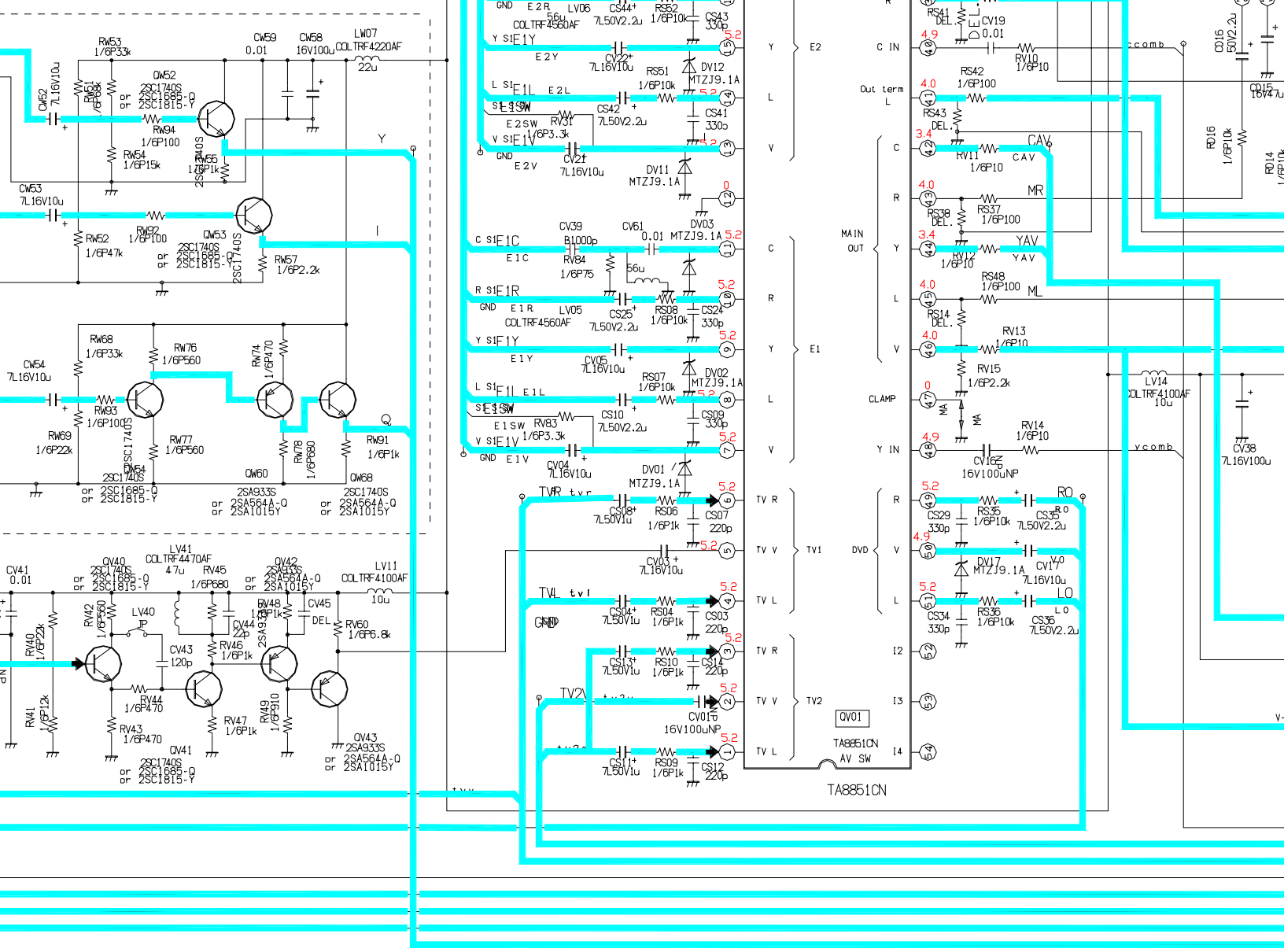


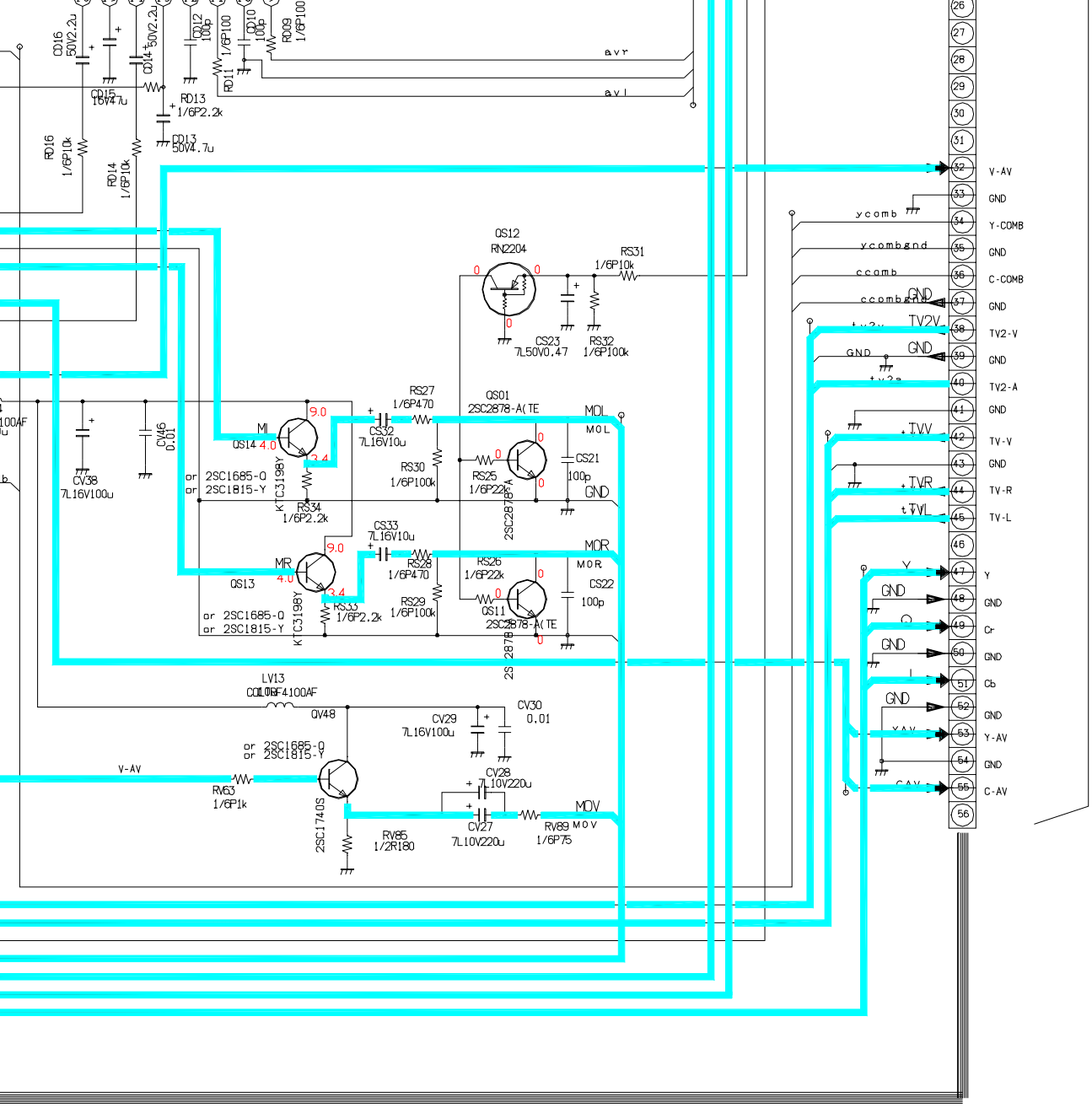

E3
GND R L GND V GND C GND Y
PV61
9P
3GN R L V1 V 2GN C1 1GN Y1
LV02
TEM2028
LV01
TEM2028
50A10/50 NOT USED
RV01
4.7K
RV04
1/6P100
RV03
1/6P100
RS02
1/6P4.7k
SCL1
SDA1
MUTE
DV09
MTZJ9.1A
CS38
7L50V2.2u
RS12
1/6P10k
CS28
330p
LV31
7L16V10u
DV08
MTZJ9.1A
CS16
7L50V2.2u
RS49
1/6P10k
CS15
330p
DV07
MTZJ9.1A
VCC
E3
PIP OUT
SW1
I/O2
C IN (PIP)
SW3
Y IN (PIP)
Out term R
Out term L
CL
MA
RV28
4.7K
RY80
1/6P330
Y2
RY81
1/6P100
RV90
1/6P10k
RV91
1/6P3k
QV20
RN1204
CD02
5600p
QD01
TA8173AP
SURROUND
GND
LF1
R IN
REF
CD16
50V2.2u
CD15
16V4.7u
RS40
1/6P100
RS41
DEL.
CV19
0.01
RV10
1/6P10
RS42
1/6P100
RS43
LV07
COLTRF4399AJ
TRF4399AJ
CV09
16V470u
CV08
16V470u
CV02
0.01
E1C
E2C
CV24
0.01
RV32
1/6P75
CV23
0.01
DV13
MTZJ9.1A
E1R
GND
E2R
LV06
COLTRF4560AF
CS44
7L50V2.2u
RS52
1/6P10k
CS43
330p
E1Y
E2Y
CV22
7L16V10u
RS51
1/6P10k
DV12
MTZJ9.1A
E1L
E2L
CS42
CS41
E2
RW53
1/6P33k
CW59
0.01
CW58
16V100u
LW07
COLTRF4220AF
22u
CW52
7L16V10u
RW51
1/6P33k
QW52
2SC1740S
or 2SC1685-O
or 2SC1815-Y

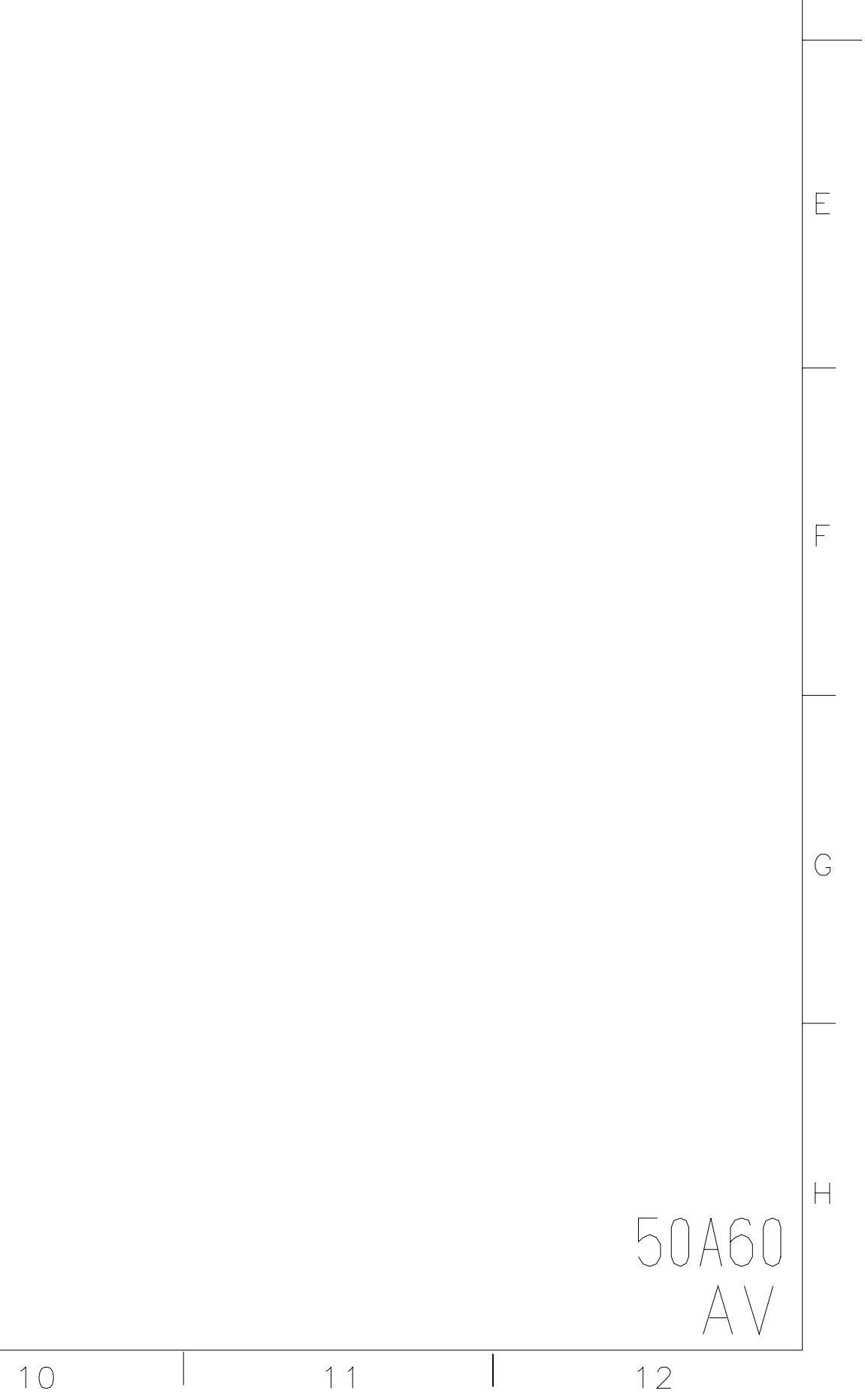

PV05
B8S6P
SW
GND
L-OUT
R-OUT
GND
VARI-L
VARI-R
GND
PIP-Y
GND
AV-L
AV-R
GND
A.MUTE
SCL1
SDA1
+9V
GND
SYNC-AV-1
SGA
PIP-V
GND
toSIGNAL/CONV
lout
rout
varil
varir
avl
avr
amu
scl1
sda1
RY80 1/6P330
CY40 7L50V10u
Y2
RY81 1/6P100
QY26 2SC1740S or 2SC1685-Q or 2SC1815-Y
RY87 1/6P10
PIPY
PYG
GND
RY82 1/6P1k
LY22 TEM2028K
RV90 1/6P10k
RV91 1/6P3k
DV25 1SS133
RV92 1/6P10k
QV22 2SA933S or 2SA564A-Q or 2SA1015Y
CV67 1000p
RV98 1/6P4.7k
QV20 RN1204
CV64 7L50V10u
QV21 2SC1740S or 2SC1685-Q or 2SC1815-Y
CV65 4700p
RV93 1/6P10k
CV66 SL50P
RV94 1/6P3.9k
RV95 1/6P12k
RV96 1/6P270k
RV97 1/6P330
CV68 7L50V1u
QV23 2SA933S or 2SA564A-Q or 2SA1015Y
CD03 0.039
CD02 5600p
MCD04 0.039
CD08 16V10u
QD01 TA8173AP SURROUND
GND LF1 PS1 PS2 PS3 PS4 LF2 VCC
R IN REF L IN S/N SW L LPF L OUT R LPF R OUT
CD16 50V2.2u
CD15 16V47u
CD14 50V2.2u
CD12 100p
CD10 100p
RD11 1/6P100
RD09 1/6P100
RD13 1/6P2.2k
CV49 0.01
CV48 16V100u

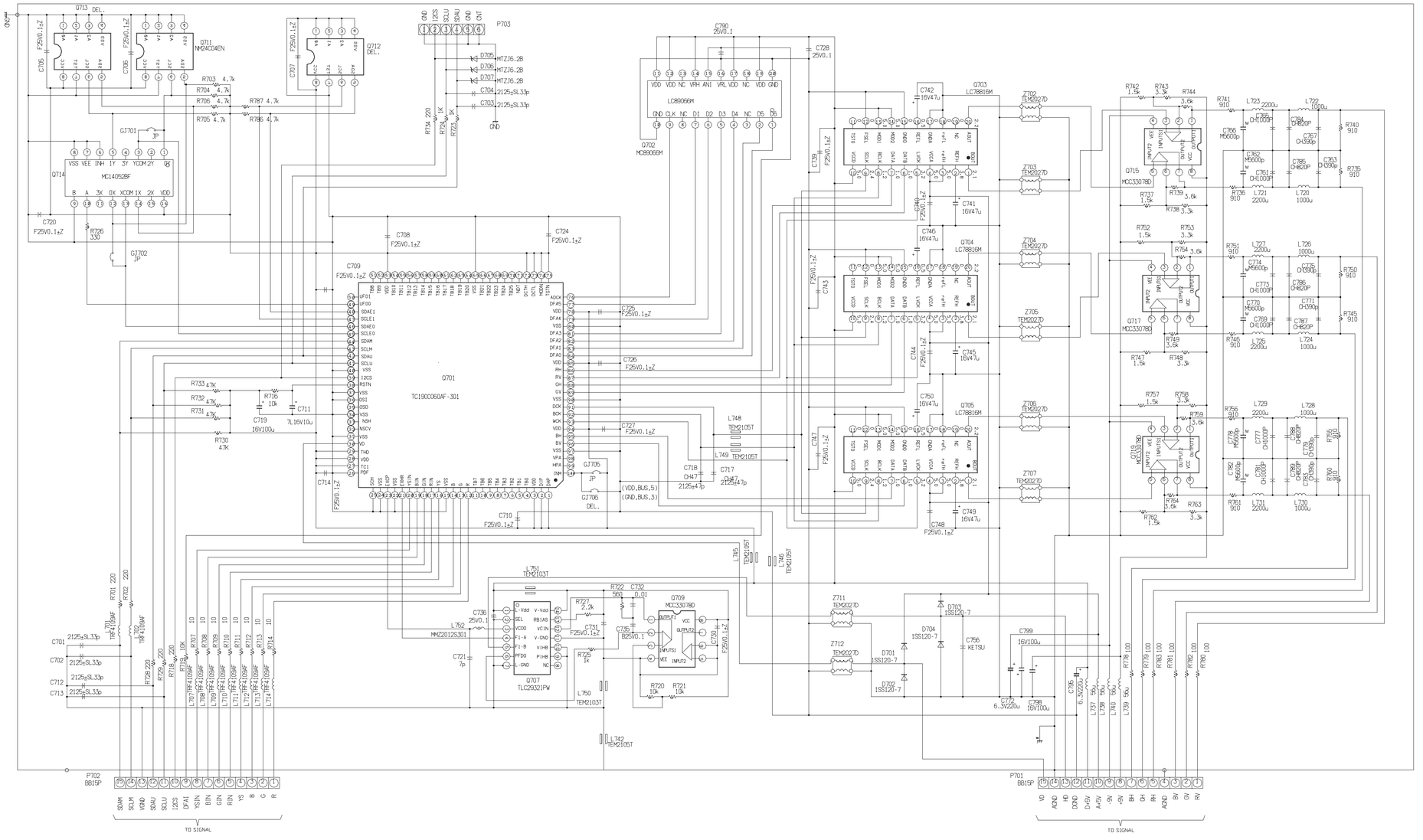
10
11
12
A
B
C
D
NV


50A10 NOT USED
DVD
M.OUT
MAIN/PIP AUDIO OUT
VARI AUDIO OUT
C-IN
50A10 NOT USED
RV24 1/6P75
RV26 1/6P75
RV25 1/6P75
PV03 JACK 7P
RS21 1/6P100k
RS22 1/6P100k
PS01 JACK 1P
S602 2C2P
L-OUT
R-OUT
ON OFF
C-IN
CW52 7L16V10u
CW53 7L16V10u
CW54 7L16V10u
RW68 1/6P33
RW69 1/6P22k
CV41 0.01
CV40 16V100u
CV42 16V100u
RV40 1/6P22k
RV41 1/6P12k
RV42 1/6P560
E
F
G
H
1
2
3


TA8851CN
AV SW
QV01
MAIN
OUT
DVD
CLAMP
Y IN
C IN
Out term
ycomb
ccomb
TV R
TV V
TV L
TV1
TV2
E1
E2
RO
LO
CAV
YAV
MR
ML

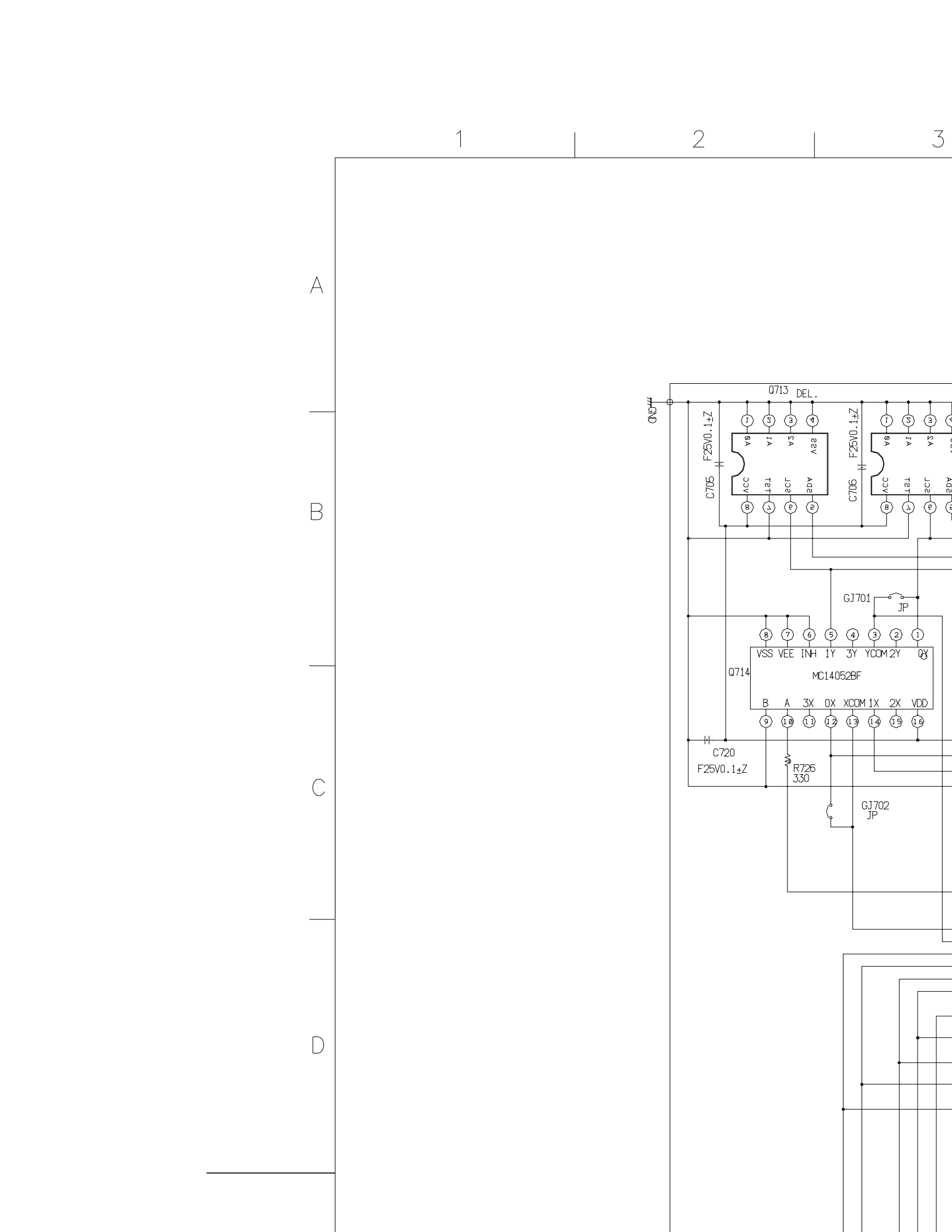

CD16 50V2.2u
CD15 16V4.7u
CD14 50V2.2u
CD12 100p
CD10 100p
RD09 1/6P100
RD11 1/6P100
RD13 1/6P2.2k
CD13 50V4.7u
RD16 1/6P10k
RD14 1/6P10k
avr
avl
OS12 RN2204
RS31 1/6P10k
CS23 7L50V0.47
RS32 1/6P100k
RS27 1/6P470
CS32 7L16V10u
OS01 2SC2878-A(TE
MOL
MOL
CS21 100p
RS30 1/6P100k
RS25 1/6P22k
GND
MI
OS14
KTC3198Y
RS34 1/6P2.2k
or 2SC1685-O
or 2SC1815-Y
CV38 7L16V100u
CV46 0.01
CS33 7L16V10u
RS28 1/6P470
RS26 1/6P22k
MOR
MOR
CS22 100p
RS29 1/6P100k
MR
OS13
OS11 2SC2878-A(TE
RS33 1/6P2.2k
LV13
CV48
CV29 7L16V100u
CV30 0.01
CV28 7L10V220u
CV27 7L10V220u
MOV
RV89 1/6P75
RV85 1/2R180
2SC1740S
RV63 1/6P1k
V-AV
ycomb
ycombgnd
ccomb
TV2V
GND
TVV
TVR
TVL
Y
Cr
Cb
Y-AV
C-AV
V-AV
GND
Y-COMB
GND
C-COMB
GND
GND
TV2-V
GND
TV2-A
GND
TV-V
GND
TV-R
TV-L
GND
Y
GND
GND
Cr
GND
GND
Cb
GND
GND
Y-AV
GND
C-AV

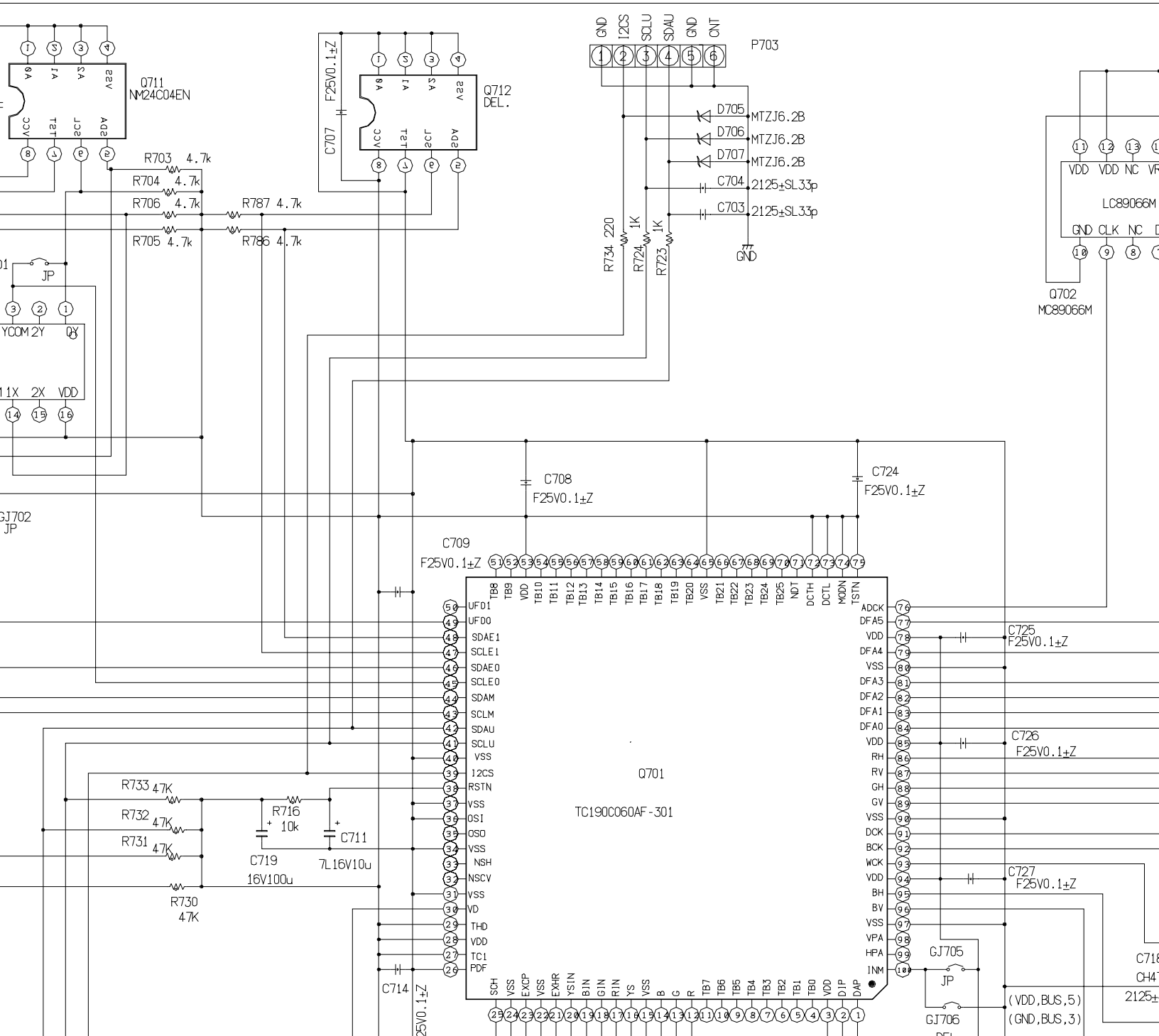

E
F
G
H
50A60
AV
10
11
12

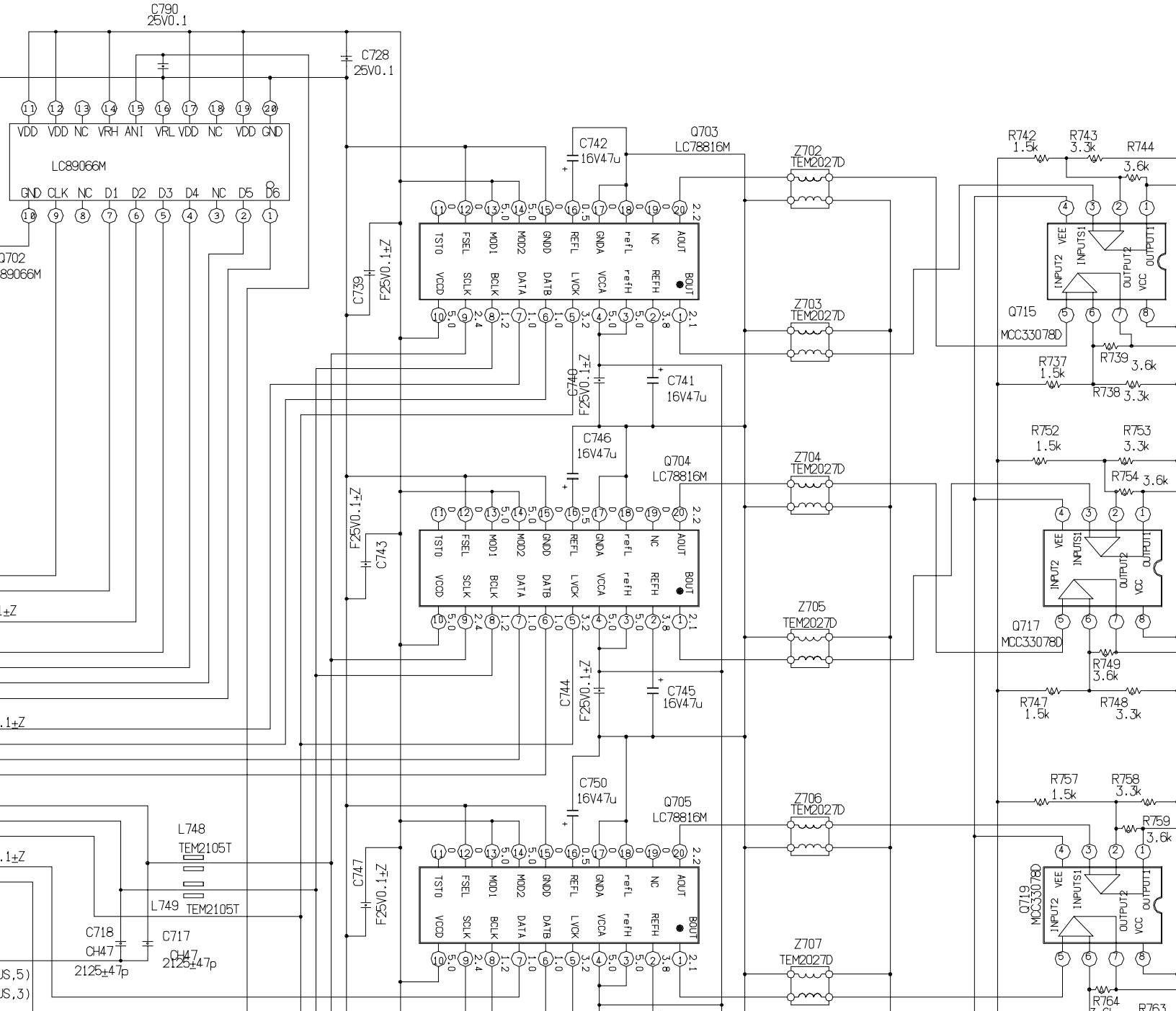


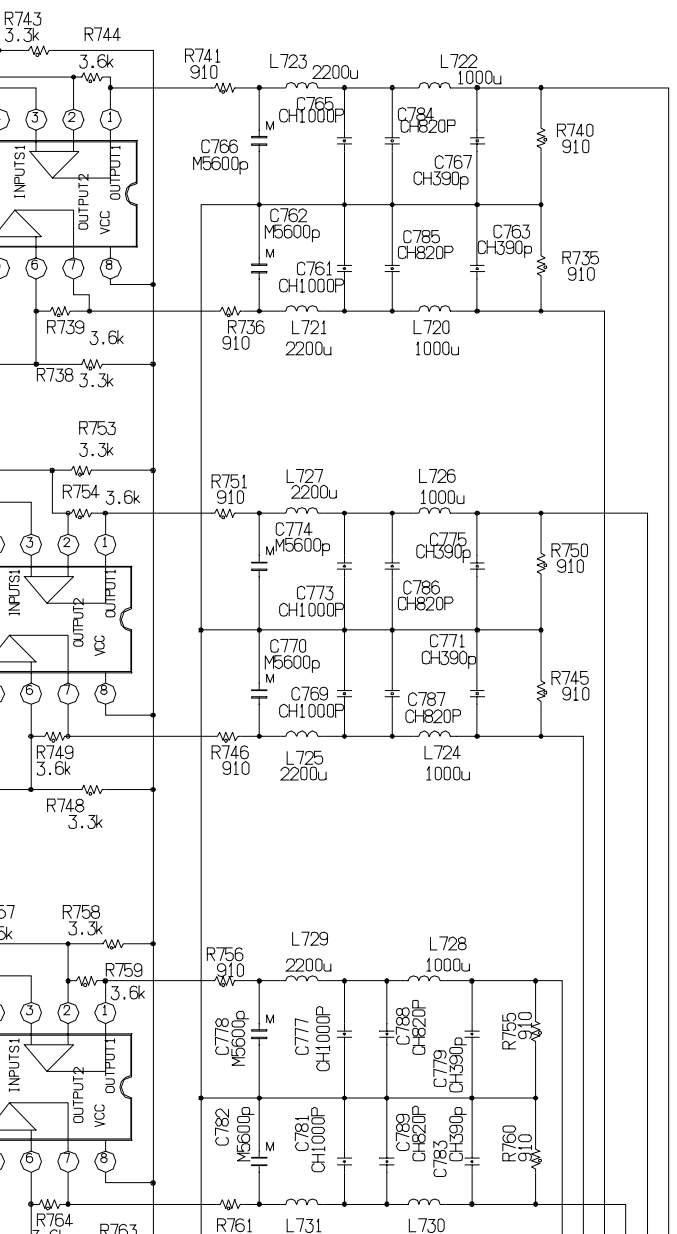
	Q711	Q712	Q713	Q714	GJ701 GJ702	R786 R787	R705 R706
TNP4.3	4KB	×	×	×	○	○	×
TNP16.9	16KB	×	×	×	○	○	×
TUK4.3	16KB	16KB	×	×	○	○	×
TUK16.9	16KB	16KB	16KB	○	×	○	○
TSP4.3 DLTV4.3	16KB	×	×	×	○	○	×
TSP16.9	16KB	16KB	16KB	○	×	○	○

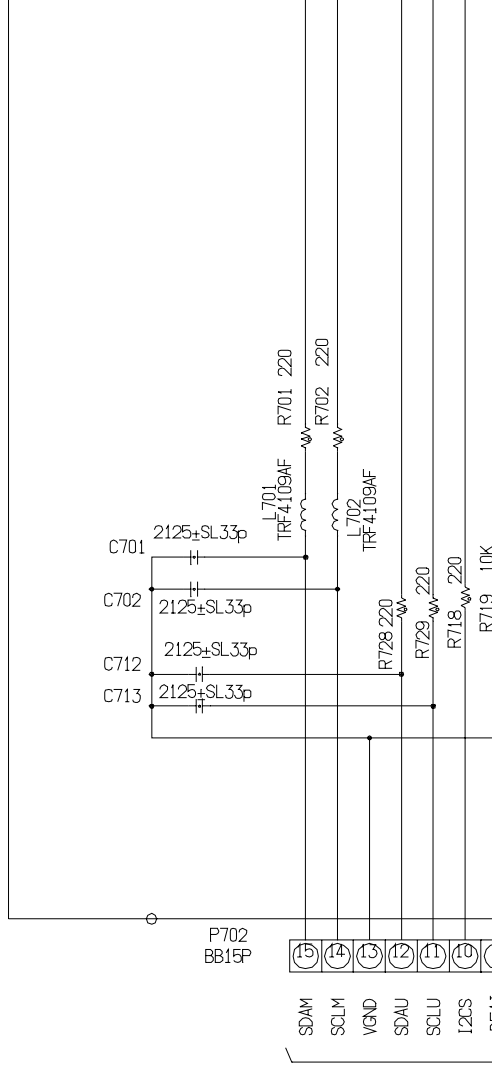
50A60 serise
D-CONVER


1
2
3
A
B
C
D
Q713 DEL.
GND
C705
F25V0.1±Z
C706
F25V0.1±Z
GJ701
JP
Q714
MC14052BF
VSS VEE INH 1Y 3Y YCOM 2Y QY
B A 3X 0X XCOM 1X 2X VDD
C720
F25V0.1±Z
R726
330
GJ702
JP

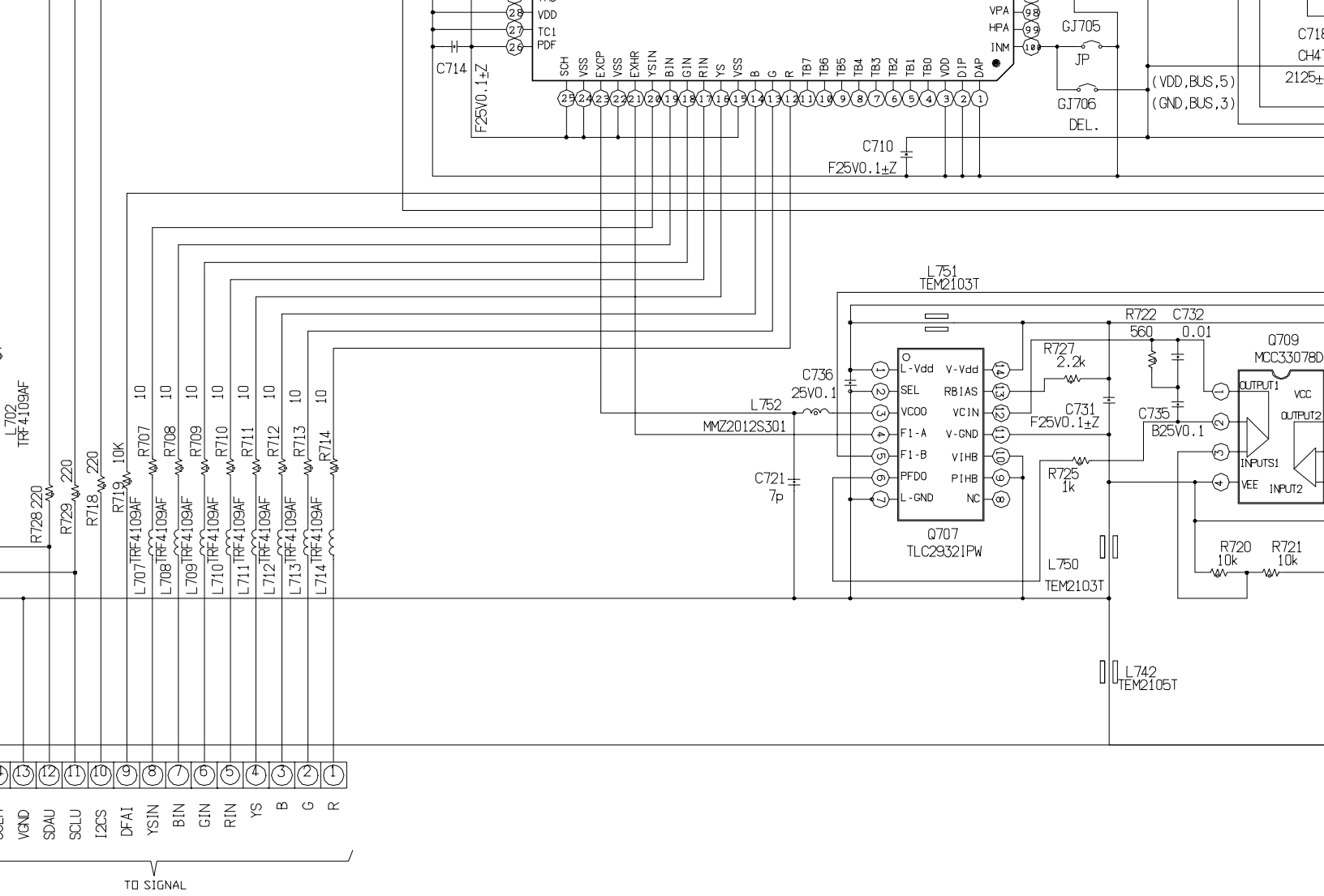

Q711
NM24C04EN
Q712
DEL.
F25V0.1±Z
C707
P703
GND I2CS SCLU SDAU GND CNT
D705 MTZJ6.2B
D706 MTZJ6.2B
D707 MTZJ6.2B
C704 2125±SL33p
C703 2125±SL33p
R734 220
R724 1K
R723 1K
R703 4.7k
R704 4.7k
R706 4.7k
R705 4.7k
R787 4.7k
R786 4.7k
JP
YCOM 2Y
1X 2X VDD
GJ702
JP
Q702
MC89066M
LC89066M
C708
F25V0.1±Z
C724
F25V0.1±Z
C709
F25V0.1±Z
Q701
TC190C060AF-301
UFD1
UFD0
SDAE1
SCLE1
SDAE0
SCLE0
SDAM
SCLM
SDAU
SCLU
I2CS
RSTN
OSI
OSO
NSH
NSCV
VD
THD
TCI
PDF
ADCK
DFA5
DFA4
DFA3
DFA2
DFA1
DFA0
RH
RV
GH
GV
DCK
BCK
WCK
BH
BV
VPA
HPA
INM
C725
F25V0.1±Z
C726
F25V0.1±Z
C727
F25V0.1±Z
GJ705
JP
GJ706
(VDD,BUS,5)
(GND,BUS,3)
R733 47K
R732 47K
R731 47K
R730 47K
R716 10k
C711 7L16V10u
C719 16V100u
C714
F25V0.1±Z

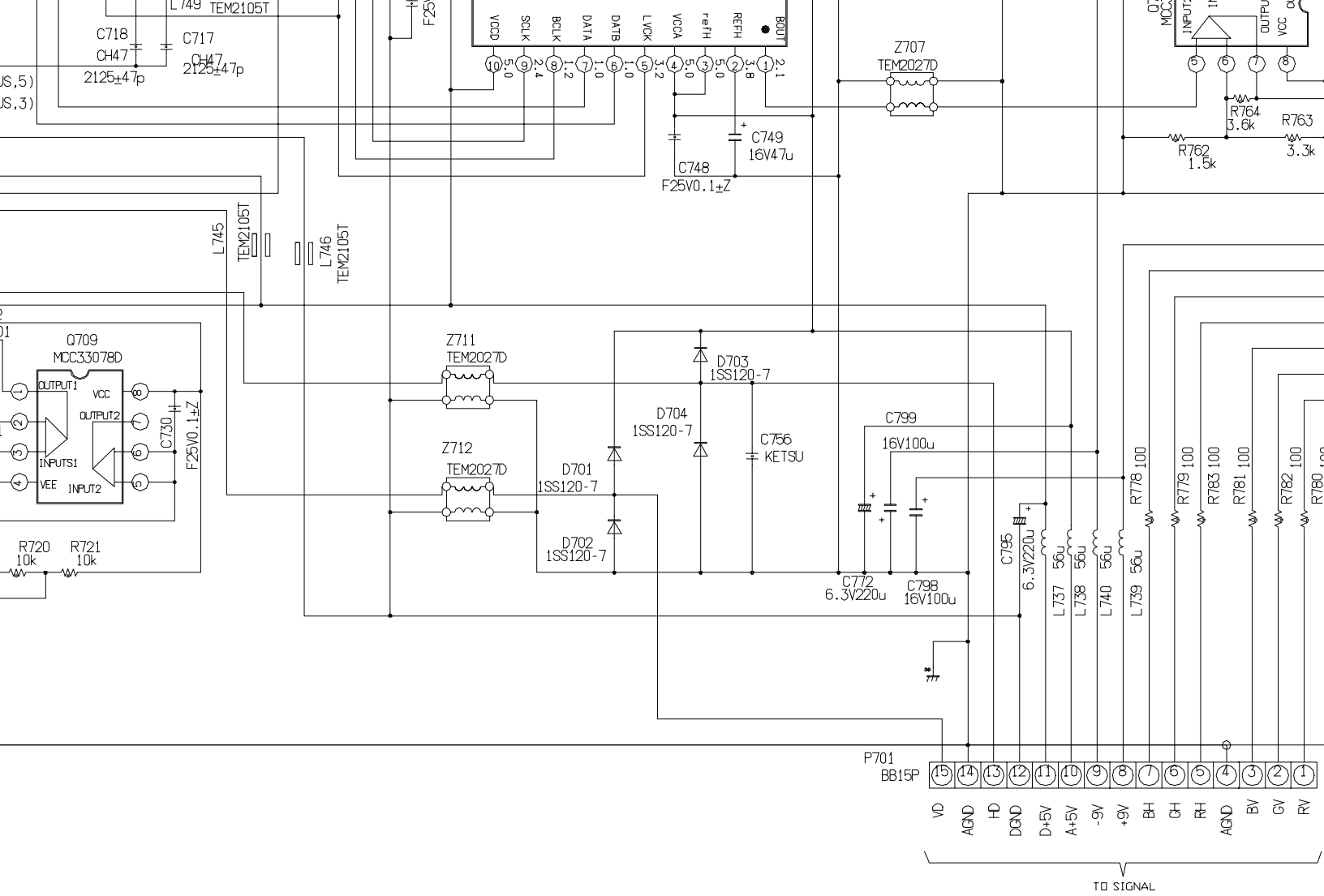

C790
25V0.1
C728
25V0.1
VDD VDD NC VRH ANI VRL VDD NC VDD GND
LC89066M
GND CLK NC D1 D2 D3 D4 NC D5 D6
Q702
89066M
C742
16V47u
Q703
LC78816M
Z702
TEM2027D
Z703
TEM2027D
C739
F25V0.1±Z
C740
F25V0.1±Z
C741
16V47u
C746
16V47u
Q704
LC78816M
Z704
TEM2027D
Z705
TEM2027D
C743
F25V0.1±Z
C744
F25V0.1±Z
C745
16V47u
C750
16V47u
Q705
LC78816M
Z706
TEM2027D
Z707
TEM2027D
C747
F25V0.1±Z
L748
TEM2105T
L749
TEM2105T
C718
CH47
2125±47p
C717
CH47
2125±47p
TST0 FSEL MOD1 MOD2 GNDD REFL GNDA refL NC AOUT
VCCD SCLK BCLK DATA DATB LVCK VCCA refH REFH BOUT
R742
1.5k
R743
3.3k
R744
3.6k
Q715
MCC33078D
R737
1.5k
R739
3.6k
R738
3.3k
R752
1.5k
R753
3.3k
R754
3.6k
Q717
MCC33078D
R749
3.6k
R747
1.5k
R748
3.3k
R757
1.5k
R758
3.3k
R759
3.6k
Q719
MCC33078D
R764
R763
VEE INPUTS1 OUTPUT1
INPUT2 OUTPUT2 VCC

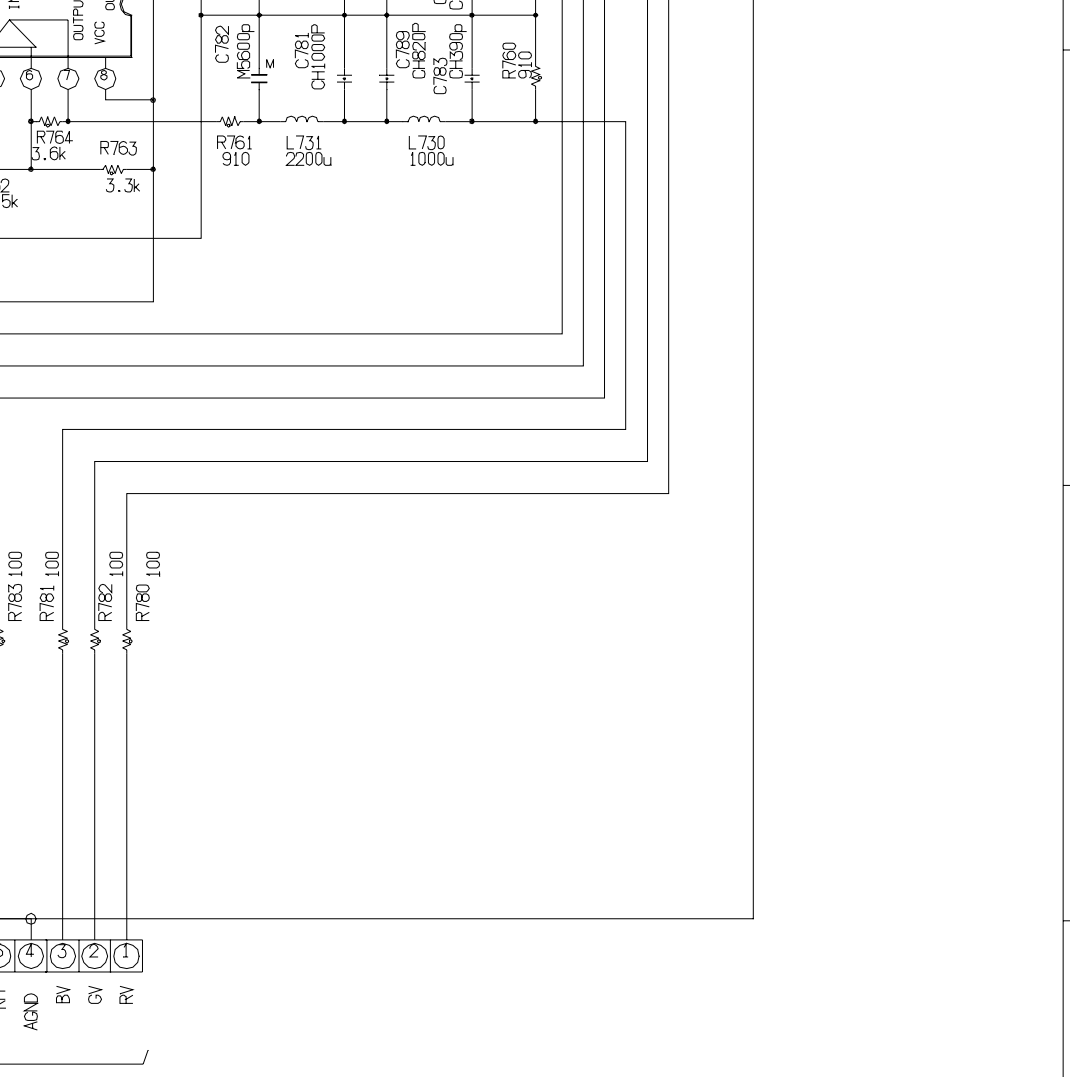

R743 3.3k
R744 3.6k
R741 910
L723 2200u
L722 1000u
C765 CH1000P
C784 CH820P
R740 910
C766 M5600p
C767 CH390p
C762 M5600p
C785 CH820P
C763 CH390p
R735 910
C761 CH1000P
R739 3.6k
R736 910
L721 2200u
L720 1000u
R738 3.3k
R753 3.3k
R754 3.6k
R751 910
L727 2200u
L726 1000u
C774 M5600p
C775 CH390p
R750 910
C773 CH1000P
C786 CH820P
C770 M5600p
C771 CH390p
R745 910
C769 CH1000P
C787 CH820P
R749 3.6k
R746 910
L725 2200u
L724 1000u
R748 3.3k
R758 3.3k
R759 3.6k
R756 910
L729 2200u
L728 1000u
C778 M5600p
C777 CH1000P
C788 CH820P
C779 CH390p
R755 910
C782 M5600p
C781 CH1000P
C789 CH820P
C783 CH390p
R760 910
R764
R763
R761
L731
L730
INPUTS1
OUTPUT1
OUTPUT2
VCC



	Q711	Q712	Q713	Q714	GJ701 GJ702	R786 R787	R705 R706
TNP4.3	4KB	×	×	×	○	○	×
TNP16.9	16KB	×	×	×	○	○	×
TUK4.3	16KB	16KB	×	×	○	○	×
TUK16.9	16KB	16KB	16KB	○	×	○	○
TSP4.3 DLTV4.3	16KB	×	×	×	○	○	×
TSP16.9	16KB	16KB	16KB	○	×	○	○


VDD
TC1
PDF
C714
F25V0.1±Z
SCH VSS EXCP VSS EXHR YSIN BIN GIN RIN YS VSS B G R TB7 TB6 TB5 TB4 TB3 TB2 TB1 TB0 VDD DIP DAP
VPA
HPA
INM
GJ705
JP
GJ706
DEL.
(VDD,BUS,5)
(GND,BUS,3)
C710
F25V0.1±Z
L751
TEM2103T
R722 560
C732 0.01
Q709
MCC33078D
R727 2.2k
C736 25V0.1
L752
MMZ2012S301
C731 F25V0.1±Z
C735 B25V0.1
L-Vdd V-Vdd
SEL RBIAS
VCOO VCIN
F1-A V-GND
F1-B VIHB
PFDO PIHB
L-GND NC
Q707
TLC2932IPW
C721 7p
R725 1k
L750
TEM2103T
R720 10k
R721 10k
OUTPUT1
VCC
OUTPUT2
INPUTS1
VEE
INPUT2
L742
TEM2105T
L702 TRF4109AF
R728 220
R729 220
R718 220
R719 10K
R707 10
R708 10
R709 10
R710 10
R711 10
R712 10
R713 10
R714 10
L707 TRF4109AF
L708 TRF4109AF
L709 TRF4109AF
L710 TRF4109AF
L711 TRF4109AF
L712 TRF4109AF
L713 TRF4109AF
L714 TRF4109AF
VGND SDAU SCLU I2CS DFA1 YSIN BIN GIN RIN YS B G R
TO SIGNAL


L749 TEM2105T
C718 CH47 2125±47p
C717 CH47 2125±47p
F25V0.1±Z
VCCD SCLK BCLK DATA DATB LVCK VCCA refH REFH BOUT
Z707 TEM2027D
C749 16V47u
C748 F25V0.1±Z
R764 3.6k
R763 3.3k
R762 1.5k
L745 TEM2105T
L746 TEM2105T
Q709 MCC33078D
OUTPUT1 OUTPUT2 INPUTS1 INPUT2 VCC VEE
C730 F25V0.1±Z
R720 10k
R721 10k
Z711 TEM2027D
Z712 TEM2027D
D701 1SS120-7
D702 1SS120-7
D703 1SS120-7
D704 1SS120-7
C756 KETSU
C799 16V100u
C772 6.3V220u
C798 16V100u
C795 6.3V220u
L737 56u
L738 56u
L740 56u
L739 56u
R778 100
R779 100
R783 100
R781 100
R782 100
R780 100
P701 BB15P
VD AGND HD DGND D+5V A+5V -9V +9V BH GH RH AGND BV GV RV
TO SIGNAL



E

F

G

H

50A60 serise

D-CONVER

10 | 11 | 12